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Ogden, Utah

INTERMOUNTAIN REGION ANNUAL FIRE REPORT

1991

THE INTERMOUNTAIN REGION
FOREST SERVICE

INTERMOUNTAIN REGION
1991
FIRE REPORT

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Rocky Mountain Research Station

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FOREWORD

Fire and aviation management activities in 1991 were highlighted by early season preparedness, successful aggressive initial attack, the Turbo DC-3 TP conversion, and very busy, productive Great Basin Coordinating Group activities.

Like most of the Western states, the Intermountain Region entered the sixth consecutive drought year anticipating severe burning conditions, especially in the 1000 hour fuels.

Late heavy snow and rain storms in April and May, combined with below normal temperatures, moderated burning conditions considerably. Although the total number of fires ranked 5th highest in comparison to the last 62 years, the number of acres burned was about average.

Four Forests (the Bridger-Teton, Humboldt, Payette, and Salmon National Forests) accounted for 90 percent of the acreage burned. Ninety-two percent of the acreage on the Payette and Salmon National Forests was in the Frank Church-River of No Return Wilderness. On the Bridger-Teton National Forest, a prescribed burn escaped resulting in a 5,957 acre wildfire.

Lightning continues to be the dominant ignition source, causing 937 fires involving 11,955 acres. People caused 401 fires burning 19,110 acres. Campfires resulted in 196 fires totaling 8,808 acres. Equipment and debris fires made up 44 percent of the person caused fire acreage.

Because of anticipated severity, prevention efforts began early. The Region sponsored a week long Fire Prevention Workshop in Reno, March 25-28. Over 75 prevention specialists from many agencies within the Great Basin and neighboring Regions attended.

Many Forests, the Regional Office and cooperating Federal and State agencies acted early in developing a Preparedness plan that provided improved "closest forces" concept implementation and better coordination between agencies. The Regional FMO's met in April to develop a Regional Severity request for the season.

Overall preparedness and initial attack forces,initially funded at 74% of the most efficient level, were strengthened through severity funding in the amount of $2,865,352.00. Improved prevention efforts and aggressive initial attack kept 96 percent of all starts to less than one acre. Multiple ignitions rarely exceeded 20 starts per day on any one Forest, enabling initial and extended attack forces to be successful.

Regional burning conditions and the overall fire situation in the West precluded significant prescribed natural fire opportunities this year. 4,759 acres of prescribed burning for fuel treatment were accomplished.

1991 FIRE AND WEATHER SUMMARY BY FOREST

ASHLEY NATIONAL FOREST

The 1991 fire season on the Ashley National Forest closed with 93% of the average number of fire starts (35 total) and approximately 0.4% of the average annual acres burned (9 total). 1991 is the third lowest number of acres burned since 1971.

The first fire was human caused and started late in the season, on July 13 in a recreation facility dumpster. The largest fire was human caused and controlled at five acres. This fire was also the last fire of the season.

COOPERATIVE EFFORTS:

An agreement for cooperation in fire prevention, presuppression, suppression and related matters exists between the following agencies: Bureau of Land Management - Vernal District; Bureau of Indian Affairs - Uintah & Ouray Indian Agency; National Park Service - Dinosaur National Monument; Utah Division of State Lands and Forestry - Daggett, Uintah and Duchesne counties and the Ashley National Forest. An agreement also exists between these agencies for the joint operation of the Uinta Basin Interagency Fire Center, excluding the National Park Service.

The Dutch John helicopter is operated under an interagency agreement between: Bureau of Land Management - Wyoming, Rock Springs District; Bureau of Indian Affairs - Uintah & Ouray Indian Agency; National Park Service - Dinosaur National Monument and the Ashley National Forest.

BOISE NATIONAL FOREST

The Boise National Forest had their seventh year of drought in Southwest Idaho. With severity crews and the lack of numerous dry lightning storms, 1991 was the first year since 1985 that the Boise did not host an overhead team for a project fire. This is attributed to having enough fire fighters and crews available when the fires were trying to escape initial attack and the quick availability of severity funded medium helicopters.

Firefighters accessed 37% of all fires by helicopter, 11% by smokejumping, 35% by engine and 17% by foot or other vehicle. A total of 52 crews were used for initial attack and support of on-going fires.

COOPERATIVE EFFORTS

The year 1991 was a milestone in the establishment of interagency dispatching with the State of Idaho, Southwest Area. The State employed a dispatcher in the Boise Dispatch Office from May through October.

BRIDGER-TETON NATIONAL FOREST

The Bridger-Teton National Forest experienced a near-normal fire season even though the winter snowfall was subnormal. January and February had below average snowdepth and associated water content. By the end of March, snow depth was above average by 2% but the water content was still 22% below normal. April's snowpack was above normal for snowpack and water content. May continued the wet weather pattern with all reporting stations receiving from 20 to 231% of normal precipitation. Early June saw substantial rain showers which helped to keep the fire danger low to moderate. July continued with heavy rains. Other significant moisture episodes occurred in late August, and September. This caused extensive growth of the grasses, forbs and shrubs. As the season progressed, a more typical pattern of heightened fire activity developed during August and September. Although weather conditions during the fire season were near normal, the forest remained in mild to extreme drought conditions.

According to the Palmer Drought Index, the Yellowstone drainage has experienced moderate to severe drought since 1983 and the Snake, Green and Bear River drainages since 1987; Western Wyoming recovered to the point that the Forest experienced incipient to [illegible] drought conditions.

The first lightning fire was in June and the last one in October with 35 fires in between. Like last year, the Forest experienced multiple fire starts due to lightning. This, at times, completely exhausted the initial attack capabilities.

The number of fires for 1991 was 38% above the 10-year average, howeveracreage burned was 76% below the 10-year average (including the 1988 fire season

COOPERATIVE EFFORTS

This was the tenth year for the Interagency Helitack operation. The partnership was soley with the Grand Teton National Park who acquired the funding for the helicopter contract. The crew provided initial attack support to project fires and helitorch expertise.

Concerned citizens, including permittees and aircraft pilots, have provided a detection program that the Forest has not been able to provide for a number of years.

of September. The Forest experienced its fifth year of drought with indicies as high as in 1990.

COOPERATIVE EFFORTS

Excellent cooperation exists between Caribou N.F. and the Idaho Falls BLM. Resources are shifted between each agency as needed to provide initial attack and support capabilities. The Caribou also assisted BLM many times with Forest personnel and equipment.

CHALLIS NATIONAL FOREST

With only 3.05 inches of precipitation from November through April, the Challis was preparing for a severe fire season, however from May through October it received 5.48 inches of rain thus reducing the high rate of fire spread that the Forest had experienced the three previous fire seasons.

Fire occurrence was above normal with 65 fires (the 1970-79 yearly average was 47.3), acreage burned was above average at 979 acres (1970-79 yearly average was 451.6). Of the 65 fires, 53 were caused by lightning.

The Frank Church Wilderness had 28 wildfires that burned 964 acres. Including the the Kwis Kwis fire that burned 956 acres under a confinement strategy.

For the fourth year in a row, the Forest Management Team was assigned the task of managing the Forest as a complex, (Challis Complex), with Misc. ABC fires.

The Forest was also a supporter of off-forest dispatches sending 75 people for a total of 209 person days off forest. The Forest helicopter also spent 12 days on off-forest assignments.

COOPERATIVE EFFORTS

The Challis N.F., Idaho Falls BLM, and the Salmon BLM have an agreement whereby protection responsibility is exchanged on large areas of land. This season the Forest took suppression action on nine fires on BLM lands protected by the Forest Service.

Current agreements with the BLM, North Custer County Rural Fire Department and Custer County Search and Rescue are being updated and will be completed by the spring of 1992. Agreements were also in effect with local businesses, and the Custer County Sheriff's office for search and rescue missions.

DIXIE NATIONAL FOREST

The drought continued for Southwestern Utah with little or no snow pack and sparce spring rains. It looked like another busy fire season. In May a few showers helped the drought problem, but also produced the growth of fine fuels.

The summer months were hot and dry, however occasional rains came at key times, helping to reduce fire intensity, holding down the rate of spread so that large fire runs were not a problem for suppression forces.

Fall months however gave a different set of problems, with larger fires and the need to assist other agencies in their suppression efforts.

In 1991, 24 fires were human-caused with the 5 year average of 17. Lightning caused fires totaled 70.

COOPERATIVE EFFORTS

Cooperation in Southwestern Utah is the life blood of the fire program. The four Color Country crews intermingled with many agencies.

The Cedar City Coop Dispatch Office handled 94 fires for the Dixie, 104 for the Cedar City BLM and 7 assists for the National Parks. The agencies that cooperate are: National Park Service - Bryce Canyon, Glen Canyon, and Zion Canyon, Bureau of Land Management - Cedar City District, Arizona Strip, the Dixie National Forest, and the Kaibab N.F. - Kaibab District, Region 3.

FISHLAKE NATIONAL FOREST

The 1991 fire season initial attack activity was busy in that there was an all-time high number of reported ignitions. Lightning was responsible for the majority of the 76 total fires. This was a significant increase over the previous 5 year average of 61.4.

Heavy spring rains produced a prodigious amount of annual grasses and forbs across the Forest. This large amount of flashy fuels caused enough concern that lots of prevention contacts were made early on. They appeared to be effective as only 5 of the 76 starts were human-caused.

Despite the threat from the over-abundance of light fuels, the season started slowly. There were three fires in May and four more in June. The June fires were all from a single lightning storm. There were a few multiple ignition days during July. August thunderstorms kept up an almost continual barrage of lightning, accounting for 54 starts.

Total precipitation was below normal for the sixth year in a row, but showed a slight increase over the five previous years. The first part of the summer was abnormally dry, but the second half turned out to be slightly wetter than normal.

COOPERATIVE EFFORTS

The BLM and Forest Service each provide a dispatcher for the Interagency Dispatch Office. The Division of State Lands and Forestry provides a portion of the operating costs.

Two interagency type II crews were made available during the season.

Initial attack resources were provided by Utah State Lands, Sevier County and Millard County Fire Wardens as well as the Millard County Volunteer Fire Department. The Forest reciprocated by providing initial attack on State, County and private lands.

HUMBOLDT NATIONAL FOREST

The Humboldt had its first fire on June 12th with a single tree, lightning caused fire on the Ely Ranger District and ended October 28th with a debris fire of less than a tenth of an acre. There were 32 reported fires with approximately 4,977 acres burned. Lightning was responsible for 24 fires and 2,216 acres. There were 8 human-caused fires for 2,761 acres.

The fire season started with near normal to above average precipitation on the Santa Rosa and Ely Ranger Districts. The Burning Index also remained relatively low with 5 days over 100. The Burning Index was highest on August 24 and October 18th with a reading of 112. The weather cooperated most of the season except during the period August 20-31 when 11 lightning fires were detected. During this 10 day period 3,470 acres burned.

COOPERATIVE EFFORTS

The Elko Interagency Dispatch Center continues to function well. All dispatchers are fully cross trained to deal with everything from medical and structure incidents to wildland incidents. An addition to the Center are three full time Nevada Division of Forestry Dispatchers who cover the hours from 0700 to 2230 hours 365 day a year including holidays.

The Cooperative Fire Protection Agreement with the Nevada Division of Forestry for presuppression and suppression on three of the districts continues to run smoothly amd effectively.

MANTI-LASAL NATIONAL FOREST

The Manti-Lasal had a total of 42 fires of which 35 were lightning and 7 human caused.

The woods were dry in the spring with below normal winter moisture for the fourth winter with very little snow pack. However, the months of July, August, and September were very wet.

COOPERATIVE EFFORTS

The Manti-Lasal and the State of Utah trained and used an AD Casual crew.

The Moab Interagency Fire Center was formed to coordinate the movement of initial attack resources and provide support for ongoing incidents. Participating agencies include the Manti-Lasal National Forest, Utah State Lands and Forestry (Carbon, Emery, Grand and San Juan Counties) and the Moab District BLM.

PAYETTE NATIONAL FOREST

It looked as if the Payette was going to be in for a long hard fire season when the Forest experienced their first lightning fire on May 17, 1991. Extremely low fuel moistures as a result of well below normal precipitation for the last 6 years coupled with another 9" deficit for the 1990-91 water year indicated the potential for a record breaking fire season.

The Forest received their share of multiple fire starts with July 14 holding the lead with 19 reported fires. Severity funding for additional fire resources and prepositioning of crews and aircraft once again proved to be money well spent. Without additional resources the Forest would have experienced much larger burned acreage from project size fires at a cost many times higher than what was actually spent on presuppression/suppression efforts. The Forest had 164 fires for a total of 9,195 acres. The largest fire was Rush Creek at 8,487 acres. This fire was in a remote section of the Frank Church River of No Return Wilderness (FCRONR). The EFSA desired alternative indicated the appropriate suppresssion response was confinement with strong concerns for economics, wilderness impacts and fire fighter safety in steep rugged terrain. Private inholdings were protected at Taylor Ranch and a historic lookout was also protected. The EFSA was later revised to include the protection of the Flying B ranch on the Salmon N.F. based on the previous decision of the appropriate suppression response. The fire spread did not reach either ranch, however, prepositioned crews were in place well in advance for structure protection. The last lightning fire was detected on September 27 and the last person caused fire was halted on October 27 to finally end the 1991 fire season.

The saving grace for the Payette was the positioning of off Forest crews. These crews were broken down for I.A. fires and also utilized in full crew configuration. Having them positioned on the Forest gave us the upper hand several times in controlling fires that could have easily escaped control. The moral and eagerness to help out on project work when not fighting fires was much appreciated.

COOPERATIVE EFFORTS

The Payette shared the lead in organizing an Interagency Extended Attack Fire Organization involving personnel from the Payette Forest, State of Idaho and Southern Idaho Timber Protection Association (SITPA). The intent of mobilizing this organization is to provide quality leadership for problem fires utilizing local resources until control is achieved or until takeover of a Class I or II team. This group is comprised of a Division Supervisor as IC, Strike team Leader as Operations Chief, Strike Team Leader as Operations Trainee, Ordering Manager as Logistics and Personnel Time Recorder as personnel/Equipment Time Recorder. Primary personnel and alternates were identified from the three agencies for local use for extended attack, not for escaped project fires.

SALMON NATIONAL FOREST

The winter of 1991 set records when temperatures fell well below normal in December and early January. Precipitation and snowpack continued the drought trend through February, then the early spring months brought above normal rainfall to the area.

Fire occurrence was above normal for the 1991 fire season with 124 fires. This is 77% above the thirty year average 53 fires. The Forest burned 7,182 acres which was 55% above the thirty year average.

The Forest had two fires managed by Type I Incident Management Teams. The Kitchen fire started August 13 in the Frank Church River of No Return Wilderness, burning 1,790 acres. McKim fire started August 24 from a crashed aircraft, burning 4,940 acres.

During October several lightning storms moved across the Forest starting numerous fires. The Salmon Forest used a Type II team to control over 52 fires between August 21st and the 30th. These fires burned over 500 acres.

COOPERATIVE EFFORTS

Region 1 Fire Cache is of great value to the Salmon Forest by being only 3 hours away, via road, allowing them to get supplies quickly.

The Salmon BLM and the Forest Service Interagency Fire Cache has been working well for five years.

SAWTOOTH NATIONAL FOREST

Fire season on the Forest started with weather and fuel conditions indicating a potentially severe season. The June and July ERC's indicated an above average fire season.

ERC;'s in "G" model fuels reached very high conditions by mid July, however summer storms were wet and ERC's down through August. The "C" model fuels reached very high by the middle of July and remained very high to extreme until mid September. Measurable rain was received in late September, however a dry October extended the season again this year. The Forest experienced a moderate drought with moderate fire weather conditions, and normal lightning occurrence. The fire season was officially over on October 27, with the last fire occurring on October 21. The fire was campfire caused.

The total statistical fires for 1991 was 52, burning 206 acres. Fire occurence was average with burned acreage lower than normal. Person caused fire occurrence was down, due to an increase in fire prevention. One lightning caused fire contributed 120 acres, the largest for the season. There were an extreme number of abandoned campfires this year, an area of emphasis next year.

COOPERATIVE EFFORTS

A close working relationship with the Shoshone and Burley BLM districts continues to be excellent. Sharing of helicopters for suppression, training helitack and an Interagency Type II team has worked well.

TARGHEE NATIONAL FOREST

The winter of 1990-91 ended with below normal snow fall for the Targhee. In May, a manual snow course on the Dubois Ranger District had 50% of normal snow depth.

Late Spring rains were fairly heavy in areas of the Forest, however by the end of June the southern portion of the Forest was still in extreme drought with a moisture deficit of 7.1 inches. The Palmer Drought Index indicated that the remainder of the Forest was in severe drought.

Fine fuels cured earlier than normal and 1000 hour fuels remained below normal for the duration of the fire season. ERC's for fuel model G were at the 90th percentile early in the season and were consistently above normal for the duration of the fire season.

This fire season the Targhee had 19 human-caused fires. 20% less than our five-year base-period average. The most common cause for human-caused fires is campfires followed by debris burning and equipment use.

COOPERATIVE EFFORTS

The Interagency Fire Control Center at West Yellowstone provided smokejumpers for seven of the fires on the Targhee. Air retardant ships used this season were from the base at West Yellowstone.

This was the second year that Idaho Falls BLM District and the Targhee N.F. combined resources to fill type II hand crews. The combined dispatches have been successful and will be continued. Engines were also crewed with BLM and Forest Service operators.

This was the first time the Targhee had combined resources with the Sho-Ban firefighters from the Ft. Hall Reservation. Sho-Ban crews were used once on a crew dispatch and once on an off-Forest engine dispatch.

Dispatching for the Department of Corrections inmate crew from the St. Anthony work camp was provided by the dispatch office.

The Fremont County Volunteer Fire Department assisted with fire suppression.

TOIYABE NATIONAL FOREST

This winter marked the fifth year of drought for the Toiyabe. The snowpack at Lake Tahoe for March 1st was 16% of normal and Walker River Basin was 12%. Another major concern was the amount of brush and fine fuels that were killed by the freezing winter weather due to the lack of a protective blanket of snow.

The season started off with a cool May, as June rolled around temperatures were near normal and it was breezy, due to a persistent pacific trough along the West Coast. July and August saw a more typical summer pattern evolving with a heat wave during the first part of July and thunderstorms in latter July and early August. By mid-August tropical storm Hilda brought a warm humid airmass into the area that brought widespread rains. The lingering moisture after Hilda fueled more thunderstorms with only spotty wetting rains. September brought thunderstorms across the high country with some wetting rains., by the end of the first week a cool wintery trough dipped into the area and the threat of fire activity began to dwindle. The end of September and much of October saw warm dry conditions over much of the Forest. The Toiyabe almost set another record for numbers of fires with 226. Acreage burned was kept low with aggressive initial attack.

COOPERATIVE EFFORTS

Two Sierra Front teams were again formed under the Incident Command System to function as Class II teams. Team members came from the Forest Service, BLM, Nevada Division of Forestry, Truckee Meadows Fire Department, Reno City Fire Department, East Fork Fire Protection District and Carson City Fire Department.

The Interagency Communications center at Eastlake was moved to it's new location at the Minden Airport and is now called the "Sierra Front Interagency Dispatch Center". The Center provides dispatching and logistics service for its members which include the Toiyabe N.F., Lake Tahoe Basin Management Unit (R-5), Carson District BLM, and the Nevada Division of Forestry Western area. The Center handled 2,481 incidents for the year of all types.

The Bridgeport Helicopter Program is still interagency with the Bakersfield District BLM. The Forest participated in an interagency helitack program with the Las Vegas District BLM, providing an assistant crew supervisor and two crew persons.

UINTA NATIONAL FOREST

Because of its fifth consecutive season of drought, the fuels on the Uinta were very dry at the season's start. However, spring weather was quite wet with near normal precipitation. The Forest had 57 fires and burned 51 acres. 20 fires were lightning caused, burning 14 acres.

Many of the fires on the Forest were person-caused, a total of 37. Because of the high incidence of campfires being left to burn out, demonstrations were conducted on proper fire pit construction, and "leave no trace" camping.

With the assistance of the Regional Office and authorized severity funding, a 20 person Type II crew was maintained during the summer of 1991 .

COOPERATIVE EFFORTS

Coordination with the Utah County Fire Marshall and Utah State Lands and Forestry continues to work well with the Utah County Sheriff's office helping with dispatch responsibilities.

WASATCH-CACHE NATIONAL FOREST

The 1991 Fire Season for the Wasatch-Cache was below normal from a standpoint of number of fires and acres burned.

Compared to 40 fires during the 1990 season, the Forest had 30 fires, with the first fire starting June 4. The Forest burned 679 acres as compared to 4,355 acres in 1990.

During the 184 day period, the temperature was 100 degrees or more only 4 times, with the highest temperature on July 6 when it reached 102 degrees.

COOPERATIVE EFFORTS

The cooperative effort among the Bureau of Land Management, Forest Service, National Weather Service, and the Division of State Lands and Forestry continued in 1991.

The Wasatch-Cache has begun the Wasatch Front Wildland/Urban Interface Cooperative Initiative. The focus is upon suppression and prevention for efficiency and safety, fire fighter training, and home owner developer awareness. Under this initiative local fire departments and the Forest work together to provide training.

The Division of State Lands and Forestry continue to provide a manager for the Salt Lake Interagency Fire Center.

Because of the interagency cooperation, we have three Type II Incident Management Teams in Utah. Dispatch coordination and rotation of the teams is handled by the Bureau of Land Management, State Office in Salt Lake. This is the first year a Type II team was not dispatched in Utah since they were organized in 1982.

NEVADA WEATHER

Much of Western Nevada and the Eastern Sierra Nevada suffered through another dry winter, adding a fifth year to the current drought pattern. March was truly a "miracle month", with a series of cold wet storms contributing significantly to a dismal snowpack.

One major concern was the amount of brush and fine fuels that were killed by the cold winter weather due to the lack of a protective blanket of snow. This concern was substantiated early in June when a small but explosive fire broke out at the Davis Creek Campground, located south of Reno on the eastern slopes of the Sierra Nevada. The majority of the 15 acre fire burned in a matter of minutes. Ironically, this fire occurred only a matter of days after a storm dropped snow over the Sierra Nevada.

Another growing concern was a heavy growth of cheat grass and other light fuels, fed by the runoff of melting March snows and a wet, cool May. As June rolled around a cool and persistent Pacific trough found a home along the West Coast. The trough provided a breezy pattern over the district for much of June with temperatures holding near normal. In fact, fire activity was minimal throughout the Western States with the BIFC morning reports showing mostly initial attack activity and planning levels no higher than 2.

The summer months of July and August saw fire activity increase and a more typical summer pattern evolved. July began with a heat wave and fuels drying rapidly, especially on the exposed southern slopes. An early July monsoon episode helped to lower the fire danger in Southern Nevada. By mid-July, dry windy conditions developed over the Forest, however the pattern gradually returned to thunderstorms in late July and early August. A daily thunderstorm pattern ensued with lightning sparking several fires throughout Northern and Eastern Nevada.

By the end of July, another brief monsoon returned to Southern and Central Nevada and provided locally heavy rainfall. This moisture spread northward into Northern Nevada and Eastern California in late July and early August for more thunderstorm activity.

After a brief dry breezy pattern, Tropical Storm Hilda brought a warm humid airmass into Nevada around mid-August that brought widespread rains initially to the Sierra Nevada zones. The precipitation from Hilda was probably the single largest factor in preventing a much more severe fire season. The lingering moisture after Hilda fueled more thunderstorms with only spotty wetting rains across Northern Nevada.

September and October were warm and dry with temperatures in the mid to upper 80s in the valleys of Northern and Central Nevada, and in the 90s to near 100 in the south.

UTAH FIRE WEATHER

Once again, as in the past few years, late winter snowfall was far from abundant in the Utah mountains.This did not bode well for anything but continuing drought conditions through the coming summer. In turn, this indicated 1991 could have a corresponding potentially severe fire season.But in contrast to winter, spring weather was quite wet with near normal precipitation. Although this did little to alleviate drought conditions, the abundant fine fuel growth it caused in some areas was another factor pointing toward a potentially active fire season. Spring rains continued longer than normal, delaying the onset of the normal drying period generally into early summer. Surprisingly, summer conditions were relatively moist.

The traditional monsoon season was quite cool and not very active with dry thunderstorms. Most thunderstorm events tended to produce moisture, inhibiting the number of lightning caused ignitions or the spread of ignitions that did occur. Also of note was that precipitation events were quite frequent, leaving little time in between events for much drying of fuels. Much of the state ended the summer with near average rainfall, well distributed throughout the summer from numerous events. Fall weather turned dry for an extended period with above normal temperatures, providing conditions like late summer. However the mild fall weather came to an abrupt end in mid to late October as a decidedly winter type storm rolled south through the state , dropping snow in many of the valleys. November and early December were quite unsettled, but most notable was the amount of precipitation, especially mountain snow. Significant snow came early to the mountains and was quite deep for so early in the year.

IDAHO / WYOMING FIRE WEATHER

The drought continued in 1991 as winter was unusually dry for the fourth year out of the last five. Less than 50 % of normal precipitation fell from November through February and mountain snowpacks were well below average. December and early January were bitterly cold setting numerous record low temperatures. Boise set an all time record low with 25 degrees below zero. The coldest reading was at Fairfield and La Barge with 52 degrees below zero. Due to the dry winter and the continuing drought, the prospects for another severe fire season appeared very real. However, the spring turned wet and cool, as it did in 1990 . March was very wet with 200 to 300 % of normal precipitation recorded at many locations. Ketchum received nearly 4.5 inches during the month, most of which fell as snow. Mountain snowpacks improved considerably but were still below normal. Cool, wet weather continued in April and May. This delayed snowmelt in the mountains by a couple of weeks. Snow packs at the end of May ranged from 54% of normal in the Payette River Basin to 94% of normal in the Snake River above Palisades Reservoir.

June had marked extremes in the weather. The middle of the month was warm with only spotty rainfall. However, the first and last weeks were very wet and cool. The wet weather at the end of the month was instrumental in delaying the usual start of the fire season. Instead of drying out in June, the district was still receiving an excess of moisture. July was a typical hot, dry summer month. Climatologically, this is the driest month of the year and rainfall this July amounted to only 50 to 75% of normal in most areas. Dry lightning started a number of fires the 13th and 14th. Another surge of lightning occurred the last week of the month, but this time was accompanied by showers. Many weather stations reported amounts of between .25 and .50 of an inch with local amounts of .75 of an inch..

August was the most active fire month this season. Some of the larger fires included: the 1,700+ acre Kitchen and the 5,000+ McKim fires on the Salmon N.F. the 5,000+ acres Rush Creek Fire on the Payette NF, the 15,000+ Stevens Peak/Rich/Watts Fire and the 3,900 acre Wheat Grass Fire on the Idaho Falls BLM district, and the moisture, from the Desert Southwest, occasionally filtered into southeast Idaho and western Wyoming resulting in scattered wet thunderstorms. However, central and western Idaho were on the western fringe of this moisture and as such received thunderstorms with only spotty light rain. August's rainfall varied widely ranging from only a few hundredths in central and southwest Idaho to over 2 inches in southwest Wyoming.

September began dry but turned very wet and cool by the second week. Rainfall amounts of 1 to 2.5 inches were common east of the Mountain Home-Lowman-Sun Valley line. Very little rain fell on the westside of the Payette NF and extreme southwest Idaho and southeast Oregon.

The first two weeks of October were unseasonally warm and dry. Temperatures were in the 70s to lower 80s with relative humidities in the teens and 20s . Humidity recovery at night was very poor, especially at the higher elevations. This two week period turned out to be the longest spell of dry weather this fire season. A major "fire bust" occurred in eastern Washington, Northern Idaho and Montana. On October 16th strong southwest winds rapidly spread fires started by downed power lines. These winds were also responsible for the Dry Cottonwood and Kinky fires on the Bridger-Teton NF. Locally heavy snow and bitterly cold temperatures brought an end to the fire season the last week of October.

Listed below are the major factors that contributed to this years's fire season, a season that potentially could have been severe, but one that was considerably milder than expected.

1. Heavy spring rains in March, April and May continued well into June. This had the effect of delaying the critical part of the fire season until the middle of July. Without these rains, large fires could have developed as early as late June.

2. The lack of extended dry periods. Periodic showers in July and August, especially in eastern Idaho and western Wyoming, wet the fuels to significantly decrease the threat of large fires.

3. The absence of a major outbreak of dry lightning and multiple starts. Other than some isolated dry lightning, most of the lightning that occurred had moisture with it.

4. The low number of high Haines Index days. The Haines Index indicated a high potential for large fire growth on only 2 days (or 1% of the days) this fire season. This is well below the climatological average of 6% of the days. Over 75% of the acreage burned this year occurred when the Haines Index was moderate.

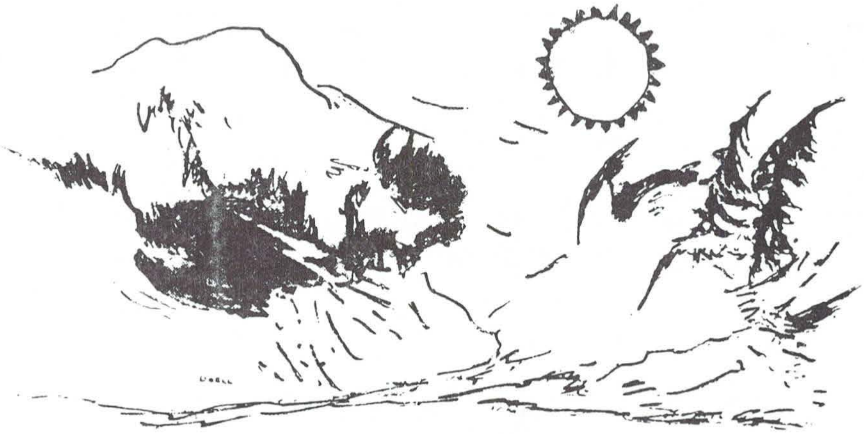
5. Most importantly, well deserved credit is given to the initial attack forces who's efforts prevented the vast majority of the fires from becoming project fires.

SPECIAL FORECASTS AND SERVICES

There were 202 spot forecasts issued between March and October in 1991. This includes 72 forecasts for wildfires (excluding on-site mobile unit forecasts) and 130 for prescribed burns and other land management activities. The 202 figure compares with the five year average (1986-1990) of 286 spot forecasts. The number of spots for wildfires was lower than 1990, the lowest since 1986. The number of spot forecasts for prescribed burns was also lower than usual due to unfavorable burning weather during the spring and fall.

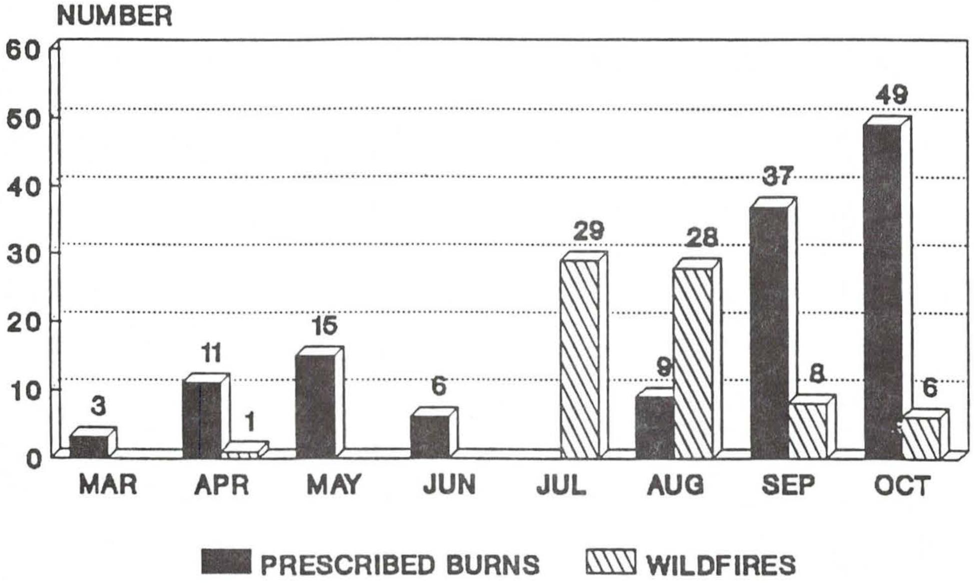
Red Flag Watches are issued to alert the fire protection agencies of the potential of severe fire weather. Red Flag Warnings indicate that severe fire weather is imminent. Severe fire weather usually means dry thunderstorms, extremely low relative humidities, or strong winds with very high to extreme fire danger. Four Red Flag Watches and seven Red Flag Warnings were issued this year. Most were issued in July and August for dry lightning and or low relative humidities. However, a Watch and two Warnings were issued for strong winds ahead of cold fronts in mid October. Six of the seven warnings were verified on at least portions of the warning area. Four of the warnings were preceded by watches.

National Weather Service weather forecasters were deployed on four fires this year: The Kitchen Fire on the Salmon N.F., the McKim Fire on the Salmon BLM and National Forest, the Squaw Lake on the Payette N.F., and the Dry Cottonwood on the Bridger-Teton N.F.

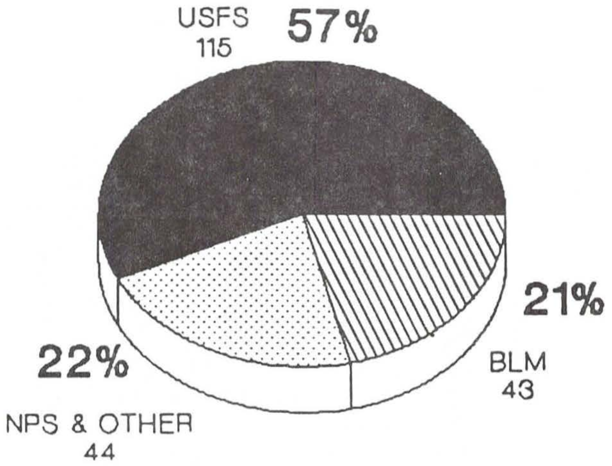


1991 SPOT FORECASTS

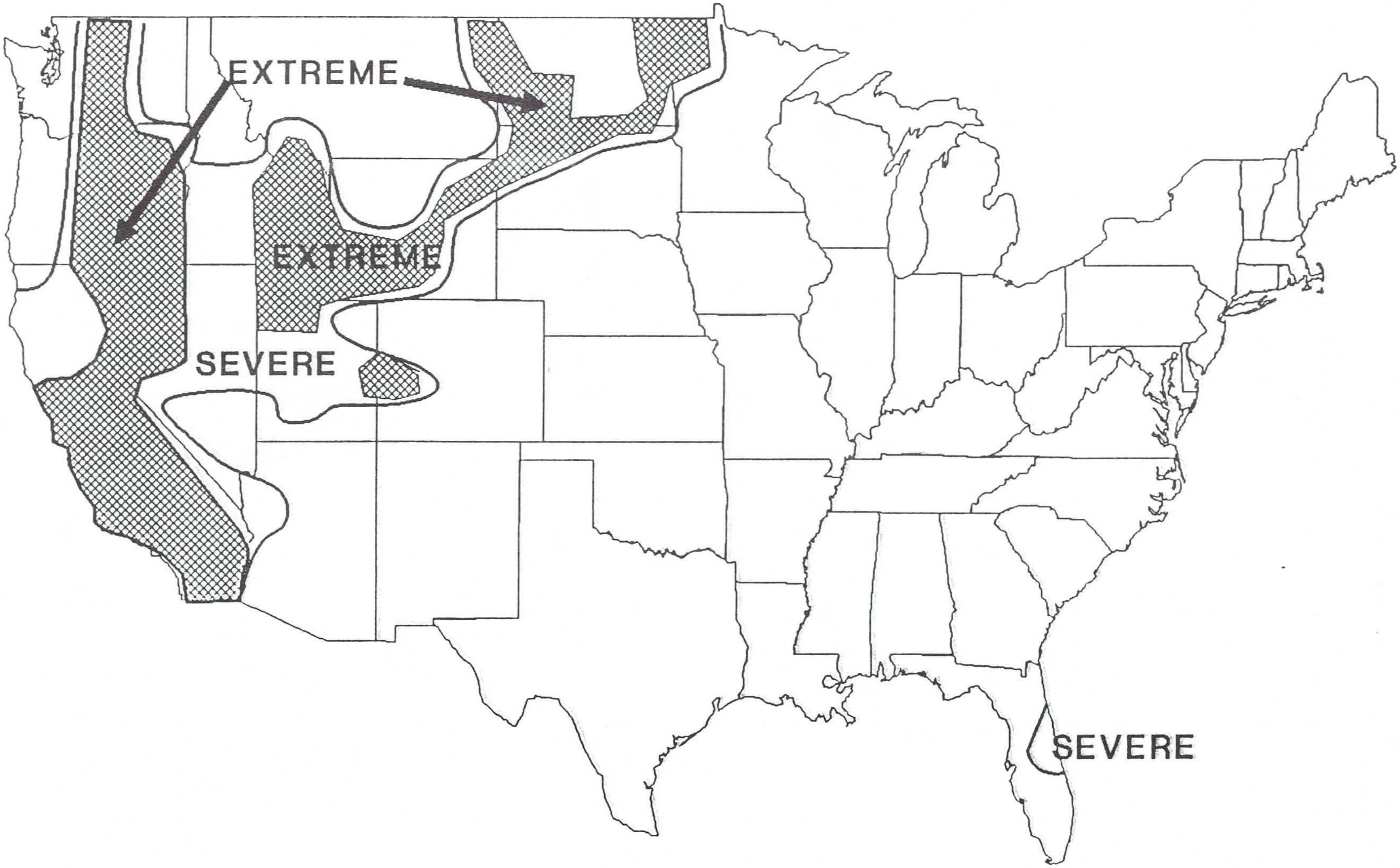
TOTAL 202



SPOT DISTRIBUTION



PALMER DROUGHT INDEX THROUGH FEBRUARY 2, 1991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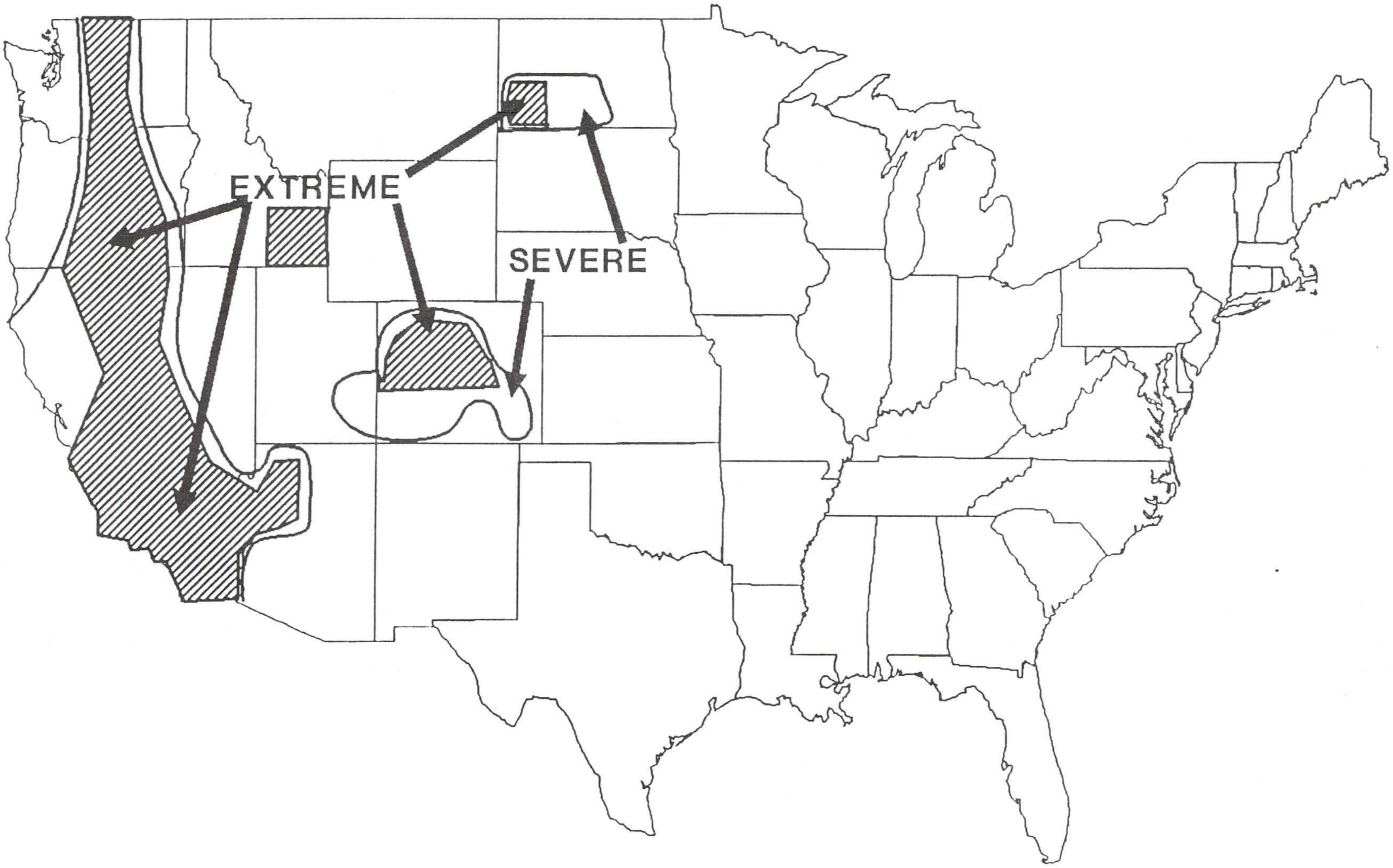
PALMER DROUGHT INDEX MAY 25, 1991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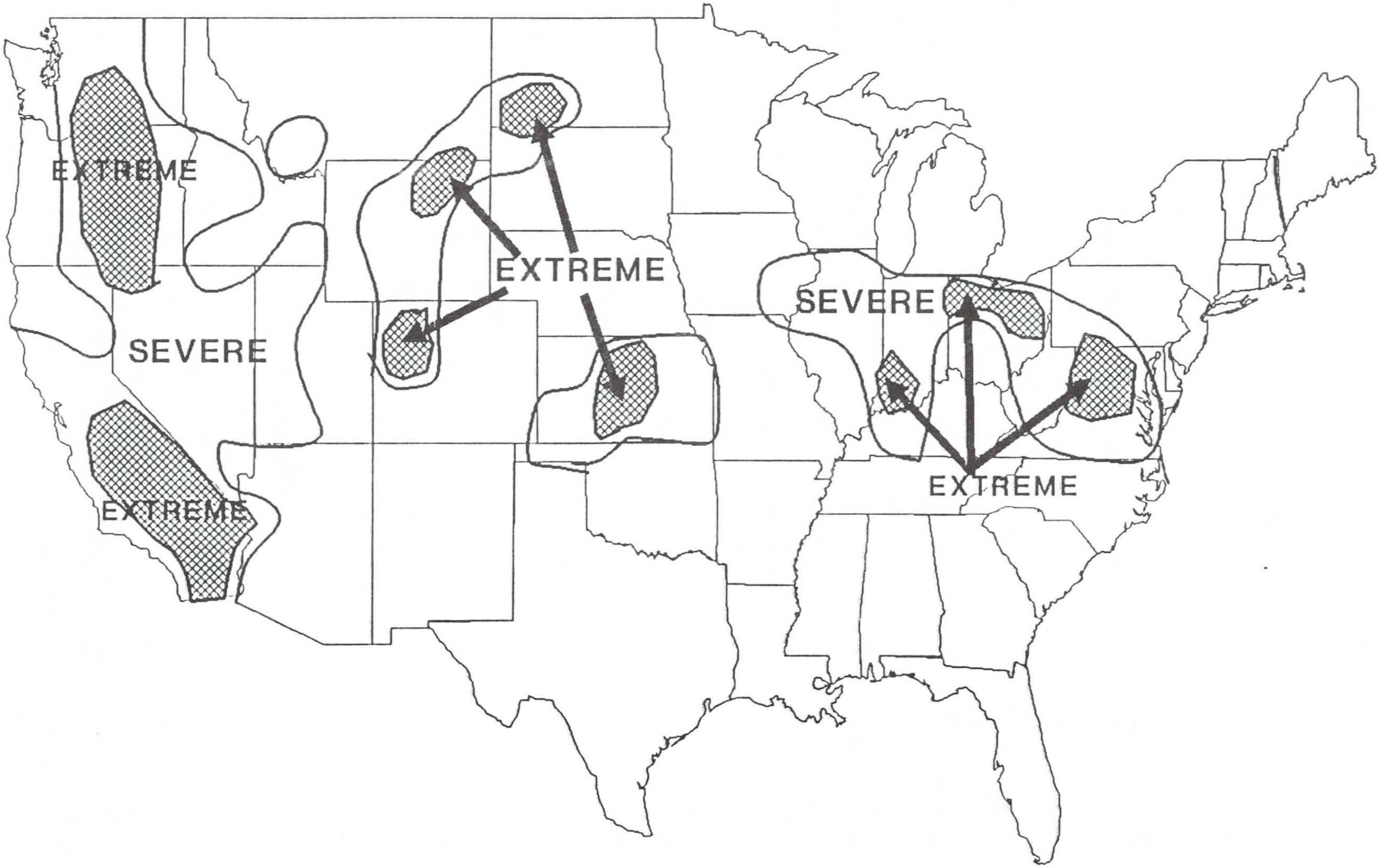
PALMER DROUGHT INDEX
THROUGH SEPTEMBER 28, 1991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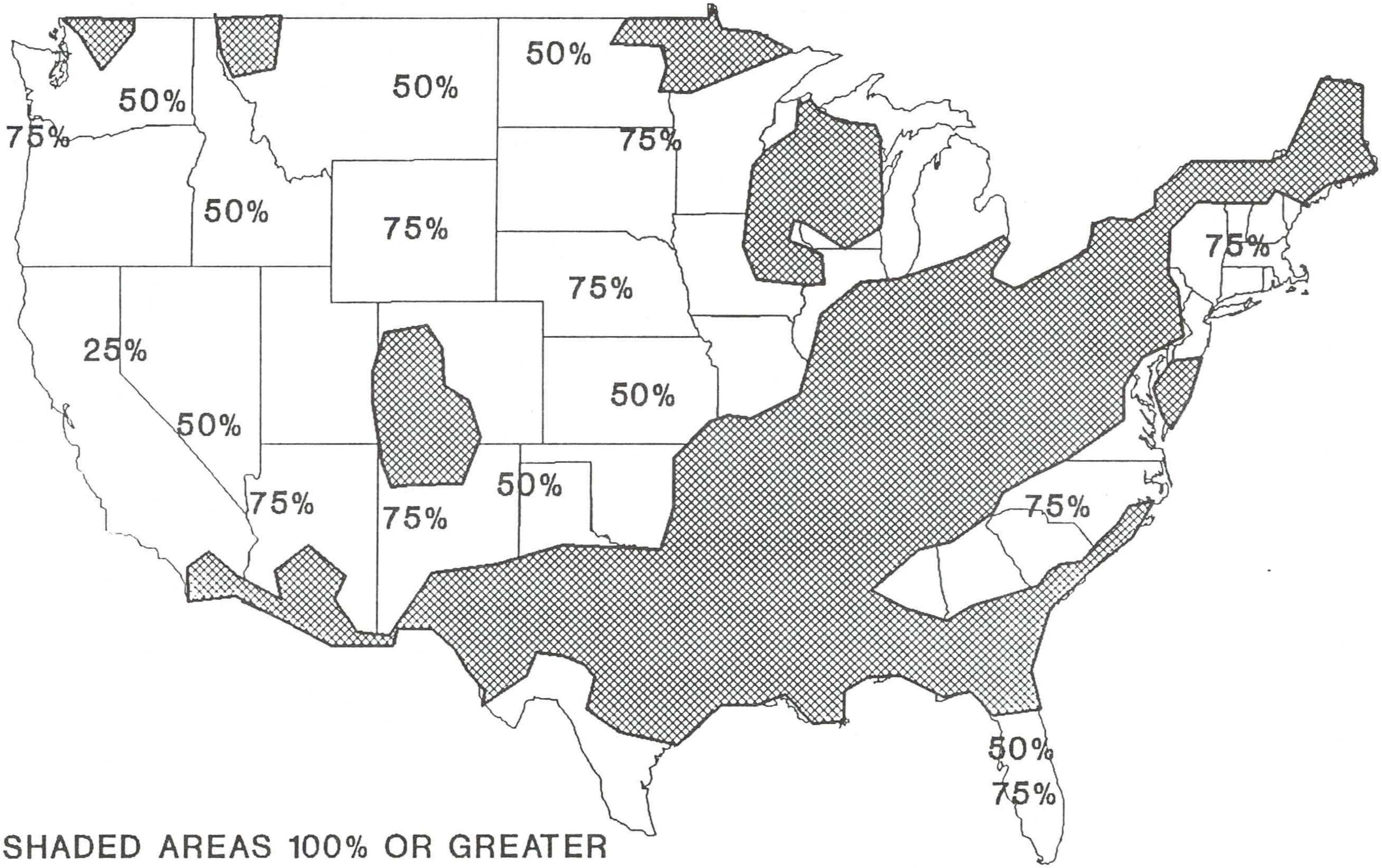
PERCENT OF NORMAL PRECIPITATION
DEC 1990-JAN-FEB 1991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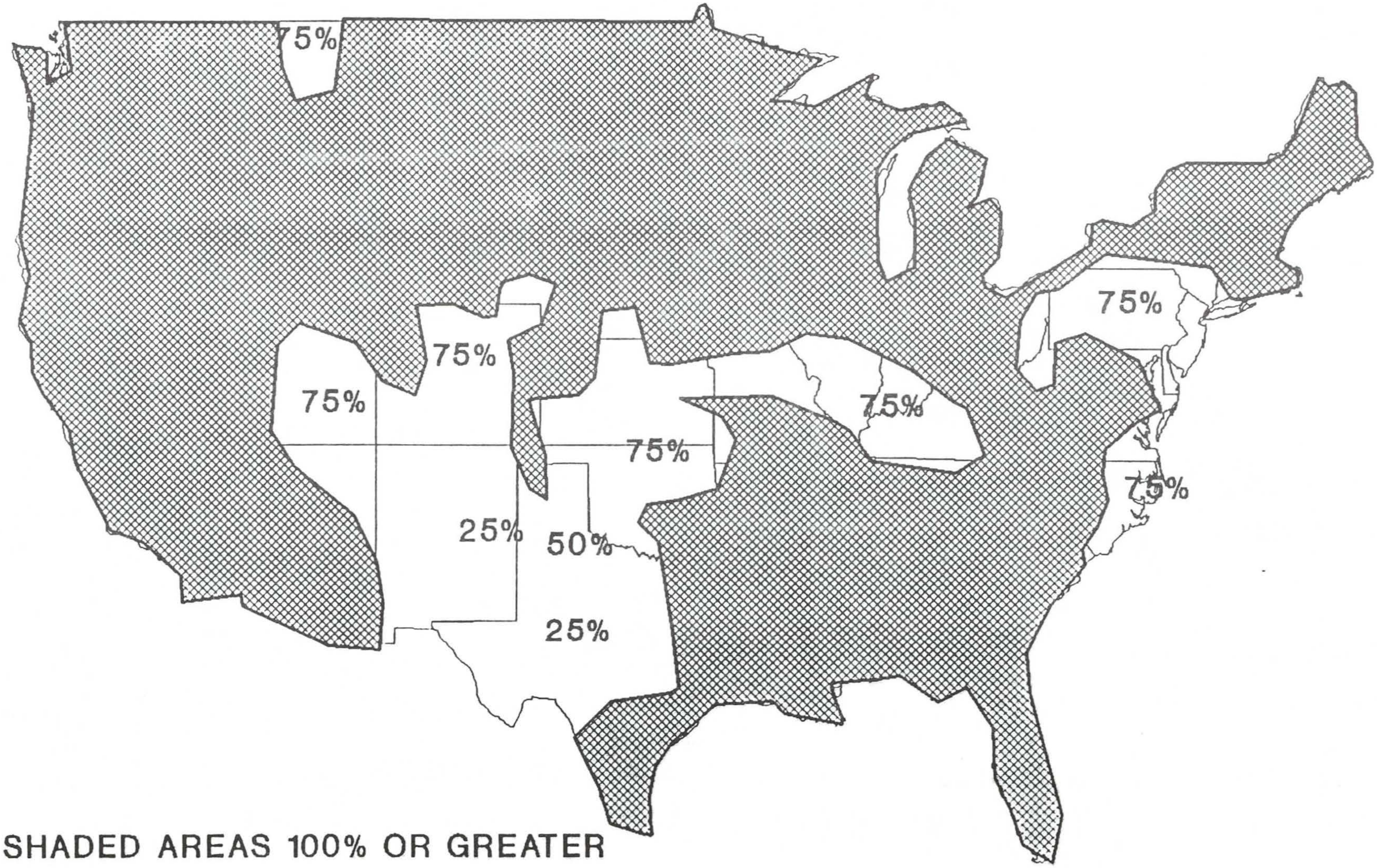
SHADED AREAS 100% OR GREATER

PERCENT OF NORMAL PRECIPITATION
MARCH-APRIL-MAY 1991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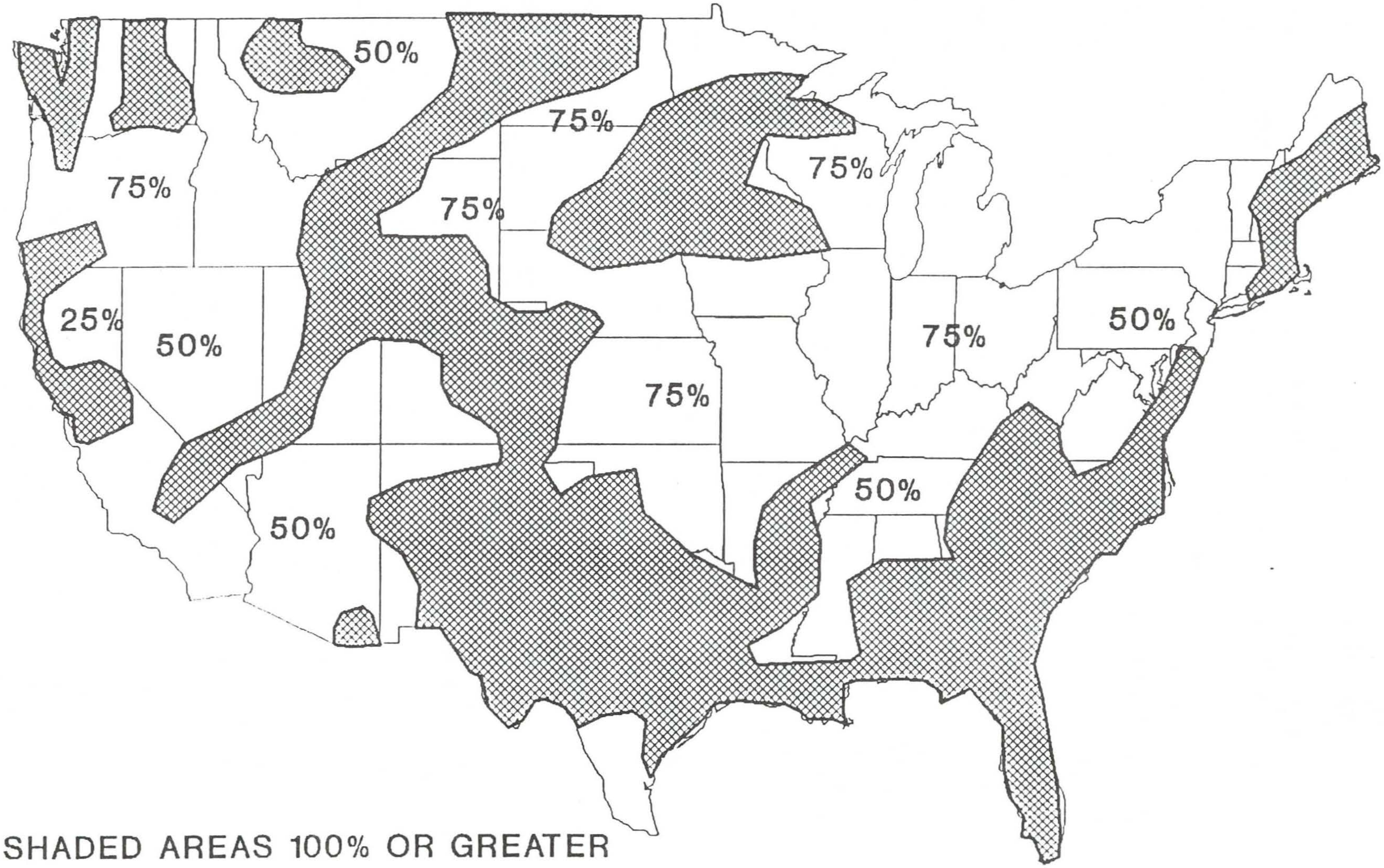
SHADED AREAS 100% OR GREATER

PERCENT OF NORMAL PRECIPITATION
JUNE-JULY-AUGUST 1991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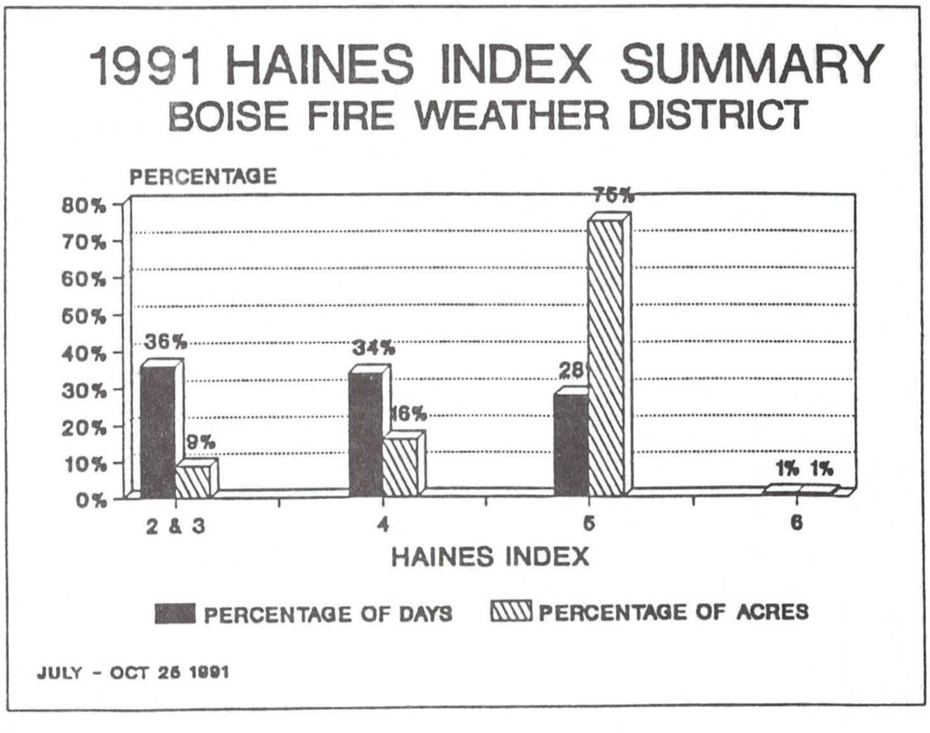
SHADED AREAS 100% OR GREATER

HAINES INDEX

The Haines Index is an indicator of the potential for large fire growth based upon the stability and dryness of the atmosphere. In the Western States, the high elevation index is used. This index is determined by calculating (from National Weather Service radiosonde data) the temperature difference between 10,000 and 18,000 ft. msl and the temperature-dew point difference at 10,000 ft. msl. Based upon these values, the Haines Index can range from a 2 to a 6. The potential for large fire growth is very low when the Index is 2 or 3, low when 4, moderate 5, and high when a 6.

The Boise radiosonde data was used to determine the Haines Index for forecast Area 2 (Snake River Valley/Southeast Oregon) and Area 3 (Central Idaho Mountains). The Salt Lake City radiosonde data was used to determine the Haines Index for forecast Area 1 (Southeast Idaho/Western Wyoming). Between July 1 and October 25, the Haines Index was 6 on only 1% of the days. This was down from 6% of the days during the 1990 fire season. The Index was 5 on 28% of the days, 4 on 34% of the days and 2 or 3 on 36% of the days. Very little acreage burned on the days when the Index was 6. This was primarily due to the low number of days when the Index was 6, just 2 days. About 75% of the acreage burned this year occurred when Index was 5, 16% when the Index was 4 and 9% when the Index was 3 . Wind was usually the cause for large fire growth when the Index was 4 or 3. The following are a few of the larger fires when the Index was 5: Hansel Mountain (Burley BLM), Stevens Peak-Rich-Watts (Idaho Falls BLM), Boise Front (Boise BLM), Dry Cottonwood (Bridger-Teton NF) and Rush Creek and Squaw Lake (Payette NF).


1991 HAINES INDEX SUMMARY
BOISE FIRE WEATHER DISTRICT

JULY - OCT 25 1991

IDAHO FOREST SERVICE PROTECTION BOUNDARIES

7

PROTECTED BY THE FOREST SERVICE

State and Private Land
(Include county and municipal land)

Forest	State	Fee Basis	Offset Basis	Reimbursement Suppression Cost only	Without reimburse ment	Other Federal Land	National Forest Land	Total	Mutual assistance agreements	National Forest Land Protected by others
BOISE	IDAHO	105,324	69,000			23,440	2,054,417	2,252,181		115,413
CARIBOU	IDAHO	22,153					1,081,128	1,103,281		
CHALLIS	IDAHO	9,012			8,328	1,000,000	2,574,979	3,592,319		212,520
PAYETTE							2,324,466	2,324,466		
	IDAHO	63,238						63,238		
	PRIVATE	89,033						89,033		
	BLM	53,411				49,790		103,201		
SALMON	IDAHO	12,707				132,480	1,358,592	1,503,779		412,432
SAWTOOTH	IDAHO	10,850			20,867		2,067,608	2,099,325		
TARGHEE	IDAHO		50,516			22,701	1,516,713	1,589,930		
TOTALS		365,728	119,516		29,195	1,228,411	12,977,903	14,720,753		740,365

NEVADA FOREST SERVICE PROTECTION BOUNDARIES

PROTECTED BY THE FOREST SERVICE

State and Private Land
(Include county and municipal land)

Forest	State	Fee Basis	Offset Basis	Reimbursement Suppression Cost only	Without reimburse ment	Other Federal Land	National Forest Land	Total	Mutual assistance agreements	National Forest Land Protected by others
HUMBOLDT	NEVADA				43,031		1,372,597	1,415,628	95,516	1,066,700
TOIYABE	NEVADA				14,730	391	3,217,994	3,233,115		78,046
TOTALS					57,761	391	4,590,591	4,648,743	95,516	1,144,746

16,260 acres of State and Private land in Nevada within the fire protection boundary which are larger blocks or can be identified on the ground by fire suppression forces. The Toiyabe is under no obligation to take action on fires on these lands and would do so only to protect adjacent National Forest lands, prevent loss of life, or to prevent loss of property values at the request of the responsible public agency.

UTAH FOREST SERVICE PROTECTION BOUNDARIES

PROTECTED BY THE FOREST SERVICE

State and Private Land
(Include county and municipal land)

Forest	State	Fee Basis	Offset Basis	Reimbursement Suppression Cost only	Without reimbursement	Other Federal Land	National Forest Land	Total	Mutual assistance agreements	National Forest Land Protected by others
ASHLEY	UTAH				21,685		1,285,437	1,307,122		
CARIBOU	UTAH						6,955	6,955		
DIXIE	UTAH						1,884,468	1,884,468	83,444	
FISH-LAKE	UTAH						1,424,479	1,424,479		
MANTI LASAL	UTAH		1,280	78,339		640	1,307,188	1,387,447	79,619	32,000
SAW-TOOTH	UTAH		8,591				63,703	72,294		3,680
UINTA	UTAH		5,784				341,916	347,700		
WASATCH CACHE	UTAH	5,487	25,690		31,493	178,000	1,260,226	1,500,896		56,085
TOTALS		5,487	41,345	78,339	53,178	178,640	7,574,372	7,931,361	163,063	91,765

WYOMING FOREST SERVICE PROTECTION BOUNDARIES

PROTECTED BY THE FOREST SERVICE

State and Private Land
(Include county and municipal land)

Forest	State	Fee Basis	Offset Basis	Reimburse ment Sup pression Cost only	Without reimburse ment	Other Federal Land	National Forest Land	Total	Mutual assistance agreements	National Forest Land Protected by others
ASHLEY	WYOMING				480		91,959	92,439	8,624	
BRIDGER TETON	WYOMING			40,086			3,412,541	3,452,627		
CARIBOU	WYOMING						6,948	6,948		
TARGHEE	WYOMING				2,440	1,486	331,249	335,175		
WASATCH CACHE	WYOMING				420		37,762	38,182		
TOTALS				40,086	3,340	1,486	3,880,459	3,925,371	8,624	

INSIDE FOREST SERVICE PROTECTION BOUNDARIES

PROTECTED BY THE FOREST SERVICE

State and Private Land
(Include county and municipal land)

Forest	State	Fee Basis	Offset Basis	Reimbursement Suppression Cost only	Without reimbursement	Other Federal Land	National Forest Land	Total	Mutual assistance agreements	National Forest Land Protected by others
MANTI LASAL	COLORADO						27,105	27,105		
TOIYABE	CALIF	134,264					643,306	777,570		
GREAT BASIN TOTALS		505,479	160,861	118,425	143,474	1,408,928	29,693.736	32,030,903	267,203	1,976,876

CUMULATIVE FIRE REPORT

REGION 4 PERIOD:01/01/91 - 12/31/91

NUMBER OF FIRES ACRES BURNED

SIZE CLASS (ACRES)	LIGHT NING	PERSON CAUSED	TOTAL FIRES	NATIONAL FOREST	OTHER INSIDE	TOTAL ACRES
A (.25 OR LESS)	713	285	998	103	4	107
B (.26 - 9)	193	92	285	351	71	422
C (10 - 99)	20	14	34	890	30	920
D (100 - 299)	5	2	7	1,340	0	1,340
E (300 - 999)	2	4	6	2,175	127	2,302
F (1000 - 4999)	3	2	5	9,830	1,500	11,330
G (5000 +)	1	2	3	14,444	200	14,644
P (PRESC. FIRE)	0	0	0	0	0	0
TOTAL	937	401	1,338	29,133	1,932	31,065

STATISTICAL CAUSE	NUMBER FIRES	ACRES BURNED
LIGHTNING	937	11,955
EQUIPMENT USE	30	2,167
SMOKING	40	42
CAMPFIRE	196	8,808
DEBRIS BURNING	36	6,315
RAILROAD	2	334
ARSON	28	612
CHILDREN	15	16
MISCELLANEOUS	54	816
TOTAL	1,338	31,065

1991 LARGE FIRES REGION 4
(100 acres or larger)

NAME OF FIRE	HOME UNIT	DATE STARTED	CONTROL DATE	ACRES BURNED
Kwis Kwis	Challis	07/05/91	08/26/91	956
Horizon	Toiyabe	07/27/91	07/29/91	700
Peavine	Toiyabe	07/27/91	07/28/91	720
Broadhollow	Wasatch-Cache	08/05/91	08/09/91	450
Kitchen Creek	Salmon	08/05/91	08/28/91	1,790
Cabin	Salmon	08/13/91	08/16/91	110
Rush Creek	Payette	08/14/91	10/25/91	8,487
Wagonhammer	Salmon	08/15/91	08/16/91	300
Rebel	Humboldt	08/20/91	08/24/91	2,000
Centennial	Sawtooth	08/22/91	08/25/91	120
West Stansbury	Wasatch-Cache	08/23/91	08/25/91	430
Reservation Hill	Humboldt	08/23/91	08/28/91	3,522
McKim	Salmon	08/21/91	09/01/91	4,940
Duck	Humboldt	08/31/91	09/01/91	1,660
Minerva	Humboldt	08/31/91	08/31/91	400
Squaw Lake	Payette	09/05/91	09/09/91	280
Fawn Creek	Payette	09/27/91	09/30/91	250
Alice	Bridger-Teton	10/03/91	10/07/91	194
Dry Cottonwood	Bridger-Teton	10/15/91	10/23/91	7,157 Error
Soda Lake	Bridger-Teton	10/15/91	10/16/91	133
Kinky	Bridger-Teton	10/16/91	10/21/91	263
Bull Canyon	Dixie	10/16/91	10/18/91	500

NUMBER OF WILDFIRES BY STATISTICAL CAUSE

			PERSON CAUSED								
Forest	ST	Lightning	Equip ment	Smok ing	Camp fire	Debris burn	Rail road	Arson	Child ren	Misc	Total
BOISE	ID	142	3	11	11	4	0	4	2	8	185
CARIBOU	ID	10	1	0	1	2	0	0	1	1	16
CHALLIS	ID	53	0	1	8	3	0	0	0	0	65
PAYETTE	ID	138	1	3	14	2	0	0	1	5	164
SALMON	ID	107	1	0	7	4	0	0	0	5	124
SAWTOOTH	ID	28	4	4	15	0	0	1	0	0	52
TARGHEE	ID	22	3	1	6	3	0	1	0	5	41
SUB-TOTAL	ID	500	13	20	62	18	0	6	4	24	647
HUMBOLDT	NV	24	2	0	3	1	0	1	0	1	32
TOIYABE	NV	140	12	4	42	4	0	10	5	9	226
SUB-TOTAL	NV	164	14	4	45	5	0	11	5	10	258
ASHLEY	UT	27	0	2	3	3	0	0	0	0	35
DIXIE	UT	70	0	8	9	4	0	0	0	3	94
FISHLAKE	UT	72	0	0	3	1	0	0	0	0	76
MANTI-LASAL	UT	35	1	3	2	0	0	0	0	1	42
UINTA	UT	20	2	2	10	0	0	10	6	7	57
WASATCH	UT	12	0	0	10	0	2	1	0	5	30
SUB-TOTAL	UT	236	3	15	37	8	2	11	6	16	334
BRIDGER-TETON	WY	37	0	1	52	5	0	0	0	4	99
SUB-TOTAL		37	0	1	52	5	0	0	0	4	99
TOTAL		**937**	**30**	**40**	**196**	**36**	**2**	**28**	**15**	**54**	**1,338**

NUMBER OF ACRES BURNED BY STATISTICAL CAUSE

PERSON CAUSED

Forest	ST	Lightning	Equip ment	Smok ing	Camp fire	Debris burn	Rail road	Arson	Child ren	Misc	Total
BOISE	ID	533	0	13	2	2	0	6	0	7	563
CARIBOU	ID	6	1	0	0	1	0	0	1	0	9
CHALLIS	ID	970	0	0	4	0	0	0	0	0	974
PAYETTE	ID	379	0	1	8491	0	0	0	0	324	9195
SALMON	ID	6925	0	0	9	128	0	0	0	120	7182
SAWTOOTH	ID	198	2	1	5	0	0	0	0	0	206
TARGHEE	ID	8	1	0	6	6	0	0	0	1	22
SUB-TOTAL	ID	9,019	4	15	8,517	137	0	6	1	452	18,151
HUMBOLDT	NV	2,216	2,160	0	0	1	0	600	0	0	4,977
TOIYABE	NV	75	3	3	261	0	0	1	8	5	356
SUB-TOTAL	NV	2,291	2,163	3	261	1	0	601	8	5	5,333
ASHLEY	UT	3	0	5	0	1	0	0	0	0	9
DIXIE	UT	42	0	13	2	71	0	0	0	40	168
FISHLAKE	UT	53	0	0	0	0	0	0	0	0	53
MANTI-LASAL	UT	26	0	6	0	0	0	0	0	0	32
UINTA	UT	14	0	0	1	0	0	5	7	24	51
WASATCH	UT	303	0	0	21	0	334	0	0	21	679
SUB-TOTAL	UT	441	0	24	24	72	334	5	7	85	992
BRIDGER-TETON	WY	204	0	0	6	6,105	0	0	0	274	6,589
SUB-TOTAL	WY	204	0	0	6	6,105	0	0	0	274	6,589
TOTAL		11955	2167	42	8808	6315	334	612	16	816	31065

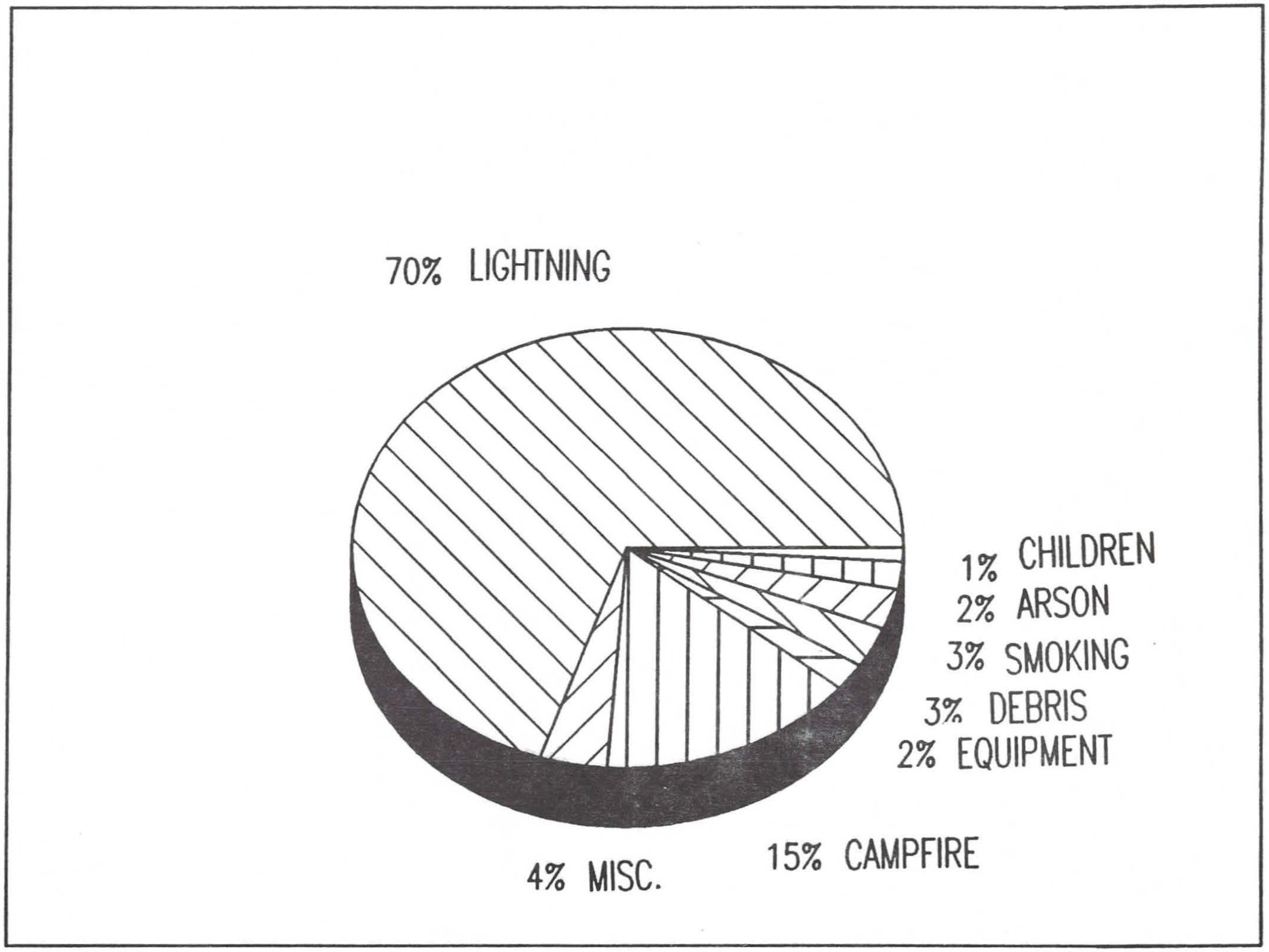
NUMBER OF WILDFIRES BY SIZE CLASS
LIGHTNING CAUSED

Forest	ST	Class A 0-.25	Class B .26-9	Class C 10-99	Class D 100-299	Class E 300-999	Class F 1000-4999	Class G over 5000	TOTAL
ASHLEY	UT	27	0	0	0	0	0	0	27
BOISE	ID	107	28	6	1	0	0	0	142
BRIDGER-TETON	WY	28	8	0	1	0	0	0	37
CARIBOU	ID	6	4	0	0	0	0	0	10
CHALLIS	ID	38	14	0	0	1	0	0	53
DIXIE	UT	58	11	1	0	0	0	0	70
FISHLAKE	UT	68	3	1	0	0	0	0	72
HUMBOLDT	NV	15	7	0	0	0	1	1	24
MANTI-LASAL	UT	27	7	1	0	0	0	0	35
PAYETTE	ID	107	27	3	1	0	0	0	138
SALMON	ID	68	32	4	1	0	2	0	107
SAWTOOTH	ID	18	7	2	1	0	0	0	28
TARGHEE	ID	13	9	0	0	0	0	0	22
TOIYABE	NV	109	29	2	0	0	0	0	140
UINTA	UT	16	4	0	0	0	0	0	20
WASATCH	UT	8	3	0	0	1	0	0	12

NUMBER OF WILDFIRES BY SIZE CLASS
PERSON CAUSED

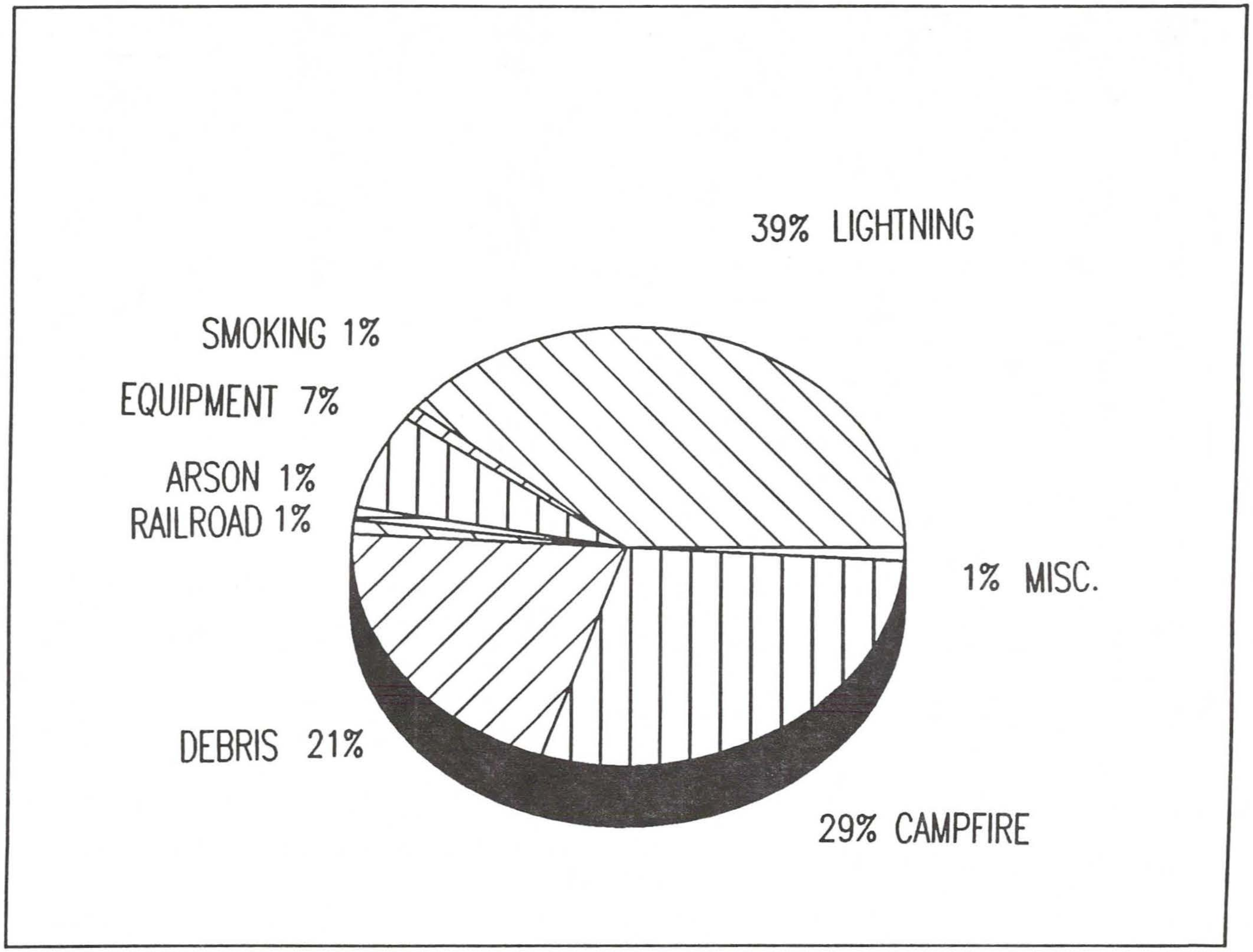
Forest	ST	Class A 0-.25	Class B .26-9	Class C 10-99	Class D 100-299	Class E 300-999	Class F 1000-4999	Class G over 5000	TOTAL
ASHLEY	UT	6	2	0	0	0	0	0	8
BOISE	ID	29	14	0	0	0	0	0	43
BRIDGER-TETON	WY	54	3	2	2	0	0	1	62
CARIBOU	ID	3	3	2	0	0	0	0	6
CHALLIS	ID	8	4	0	0	0	0	0	12
DIXIE	UT	16	6	2	0	0	0	0	24
FISHLAKE	UT	4	0	0	0	0	0	0	4
HUMBOLDT	NV	4	1	0	0	1	2	0	8
MANTI-LASAL	UT	5	2	0	0	0	0	0	7
PAYETTE	ID	18	5	1	0	1	0	1	26
SALMON	ID	8	4	5	0	0	0	0	17
SAWTOOTH	ID	17	7	0	0	0	0	0	24
TARGHEE	ID	14	5	0	0	0	0	0	19
TOIYABE	NV	71	14	0	0	1	0	0	86
UINTA	UT	22	14	1	0	0	0	0	37
WASATCH	UT	6	8	3	0	1	0	0	18

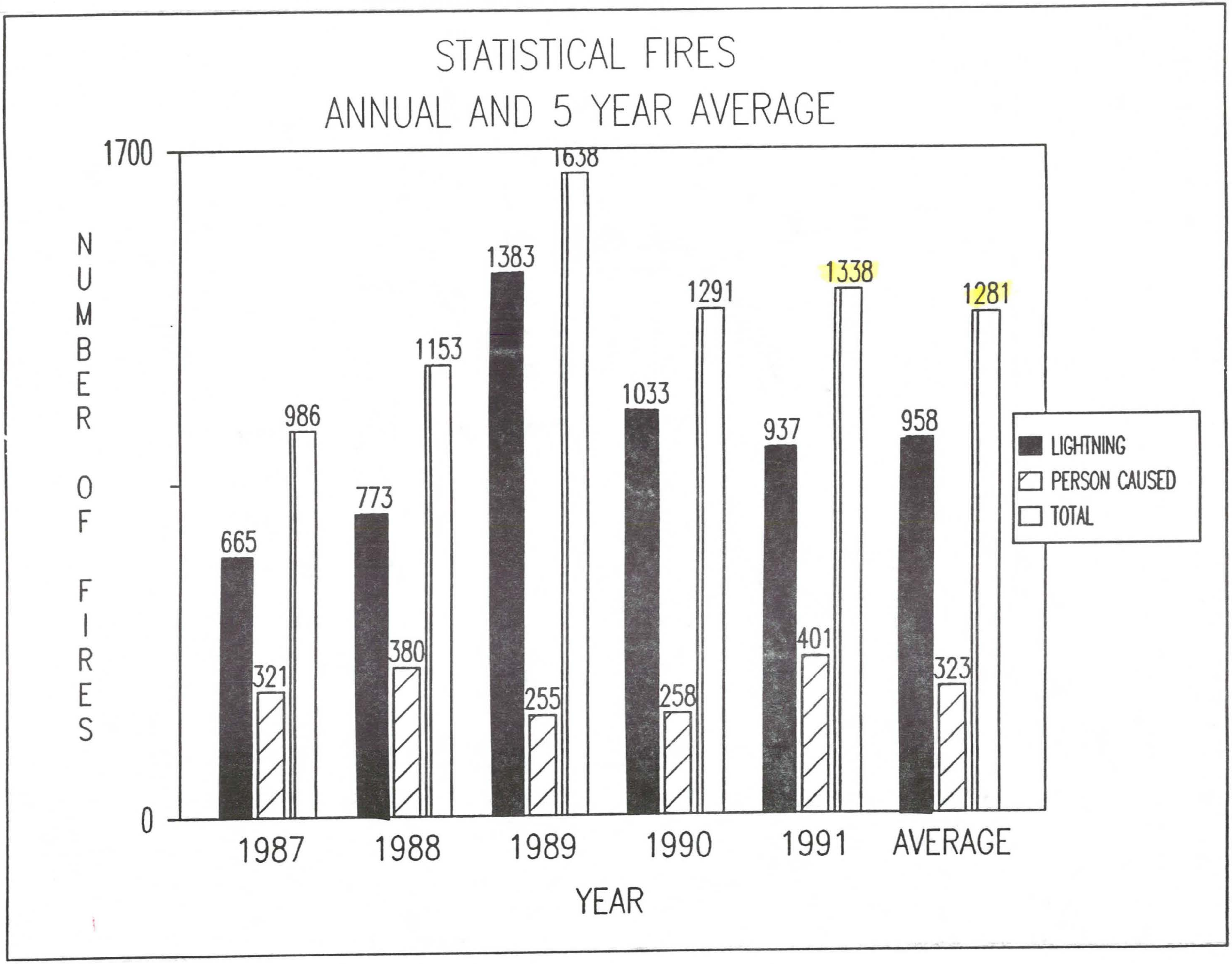
PERCENT OF 1991 FIRES BY CAUSE
1338 TOTAL FIRES



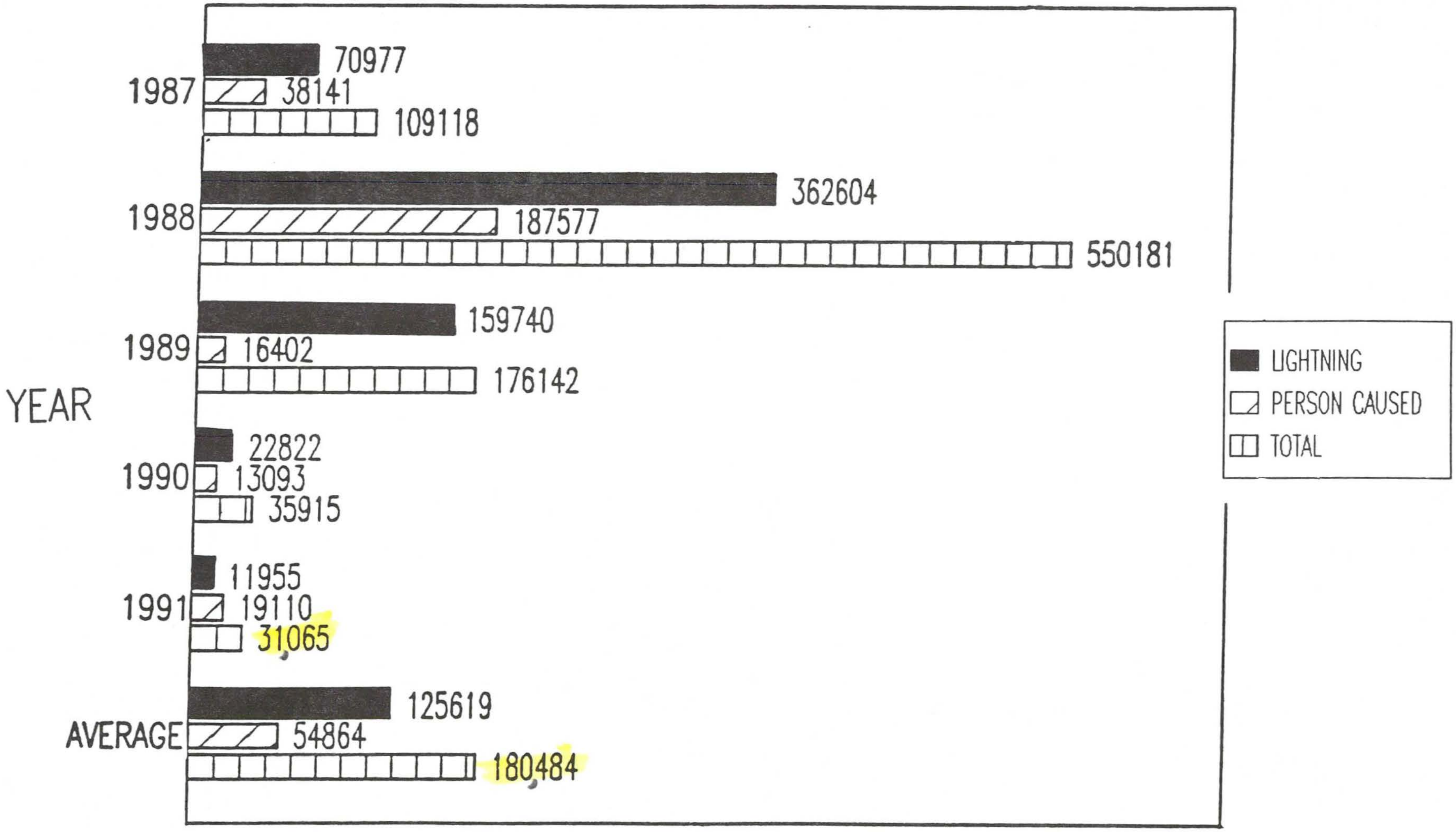
PERCENT OF 1991 ACRES BURNED BY CAUSE

31,065 TOTAL ACRES




STATISTICAL FIRES
ANNUAL AND 5 YEAR AVERAGE

STATISTICAL ACRES BURNED
ANNUAL AND 5 YEAR AVERAGE



62 YR. FIRE STATISTICS

	YEAR	LIGHTNING FIRES	HUMAN FIRES	TOTAL FIRES	CLASS A	CLASS B	CLASS C	CLASS D	CLASS E	ACRES BURNED LIGHTNING	HUMAN	TOTAL
1	1930	602	354	956	637	192	79	20	28	67,106	29,778	96,884
2	1931	664	451	1115	724	256	84	19	32	97,854	31,814	129,668
3	1932	264	252	516	346	124	26	12	8	6,417	8,872	15,289
4	1933	303	266	569	308	157	86	7	11	9,147	20,466	29,613
5	1934	599	307	906	519	250	102	14	21	26,394	79,290	105,684
6	1935	548	327	875	592	139	98	19	27	25,646	22,942	48,588
7	1936	617	259	876	661	145	41	5	24	21,309	26,267	47,576
8	1937	573	336	909	714	142	47	2	4	3,745	5,417	9,162
9	1938	1025	458	1483	1246	182	39	6	10	3,854	16,612	20,466
10	1939	816	374	1190	822	218	128	8	14	12,955	21,710	34,665
11	1940	888	431	1319	864	310	91	21	33	26,512	45,985	72,497
12	1941	399	137	536	417	70	30	11	8	1,165	6,685	7,850
13	1942	489	243	732	487	146	62	16	21	22,302	46,729	69,031
14	1943	392	165	557	381	118	35	9	14	12,145	9,483	21,628
15	1944	363	245	608	388	123	48	20	29	4,445	34,131	38,626
16	1945	276	127	403	271	82	28	11	11	27,957	6,894	34,851
17	1946	577	261	838	609	162	40	15	12	3,465	14,194	17,659
18	1947	471	228	699	427	176	46	18	32	23,649	63,158	86,807
19	1948	261	293	554	349	121	49	17	18	8,174	30,459	38,633
20	1949	687	198	885	656	178	23	10	18	37,652	15,303	52,955
21	1950	415	183	598	420	129	35	8	6	2,444	5,916	8,360
22	1951	401	188	589	437	99	36	8	9	2,473	6,432	8,905
23	1952	355	295	650	468	143	28	6	5	494	3,816	4,310
24	1953	647	257	904	672	175	39	10	8	3,941	3,703	7,644
25	1954	430	232	662	785	124	40	6	7	634	6,246	6,880
26	1955	359	156	515	408	77	22	5	3	1,158	9,703	10,861
27	1956	621	266	887	634	197	32	16	8	3,154	4,486	7,640
28	1957	515	167	682	514	123	29	5	11	6,504	21,805	28,309
29	1958	647	374	1021	765	172	57	15	12	2,339	8,098	10,437
30	1959	566	254	820	624	134	31	12	19	7,697	5,541	13,238
31	1960	721	344	1065	767	200	53	25	20	25,264	22,063	47,327
32	1961	804	235	1039	812	145	45	16	21	11,801	30,234	42,035
33	1962	719	324	1043	811	163	49	16	4	1,739	5,651	7,390
34	1963	804	242	1046	814	170	45	8	9	6,065	3,701	9,766
35	1964	484	403	887	668	166	26	16	11	13,956	11,808	25,764
36	1965	384	154	538	426	85	22	4	1	722	1,257	1,979
37	1966	1011	329	1340	1012	232	50	21	25	52,142	9,232	61,374
38	1967	747	142	889	741	125	19	3	1	965	675	1,640
39	1968	687	176	863	694	128	28	7	6	3,254	2,382	5,636
40	1969	485	207	692	578	91	21	1	1	1,448	562	2,010
41	1970	788	231	1019	833	146	35	2	3	793	2,902	3,695
42	1971	604	350	954	756	145	38	7	8	2,505	9,187	11,692
43	1972	1233	333	1566	1264	239	47	7	9	12,111	3,122	15,233
44	1973	787	370	1157	953	162	23	8	11	4,037	4,821	8,858
45	1974	572	523	1095	859	176	41	9	10	4,294	12,806	17,100
46	1975	608	298	906	767	122	15	1	1	724	798	1,522
47	1976	657	424	1081	897	138	31	7	8	3,072	4,338	7,410
48	1977	885	332	1217	987	185	32	5	8	3,048	11,643	15,141
49	1978	528	419	947	755	150	27	9	6	3,615	3,625	7,240
50	1979	684	534	1218	958	203	36	5	15	52,876	87,416	140,292
51	1980	557	312	869	716	118	19	7	9	1,093	11,631	12,724
52	1981	865	412	1277	963	223	47	15	29	91,127	47,411	138,535
53	1982	459	220	679	533	122	17	4	3	552	2,164	2,716
54	1983	374	170	544	429	78	23	7	7	1,795	4,634	6,429
55	1984	525	167	692	584	85	12	5	6	2,436	31,341	33,777
56	1985	652	284	936	715	156	42	6	17	104,141	6,737	110,878
57	1986	876	216	1092	665	314	64	15	14	80,621	16,852	97,473
58	1987	665	321	986	653	242	46	13	32	70,977	38,141	109,118
59	1988	773	380	1153	668	338	76	23	48	362,604	187,577	550,181
60	1989	1383	255	1638	971	519	71	16	10	159,740	16,402	176,142
61	1990	1031	258	1289	884	330	37	16	12	22,822	13,093	35,915
62	1991	937	401	1338	998	285	34	7	6	11,955	19,110	31,065

FY91 FIRE PROTECTION COST SUMMARY

FOREST	FFFP	SEVERITY	FIRE SUPPRESSION COSTS	FFFS
ASHLEY	378,800	98,300	209,600	255,490
BOISE	1,398,800	380,800	1,890,000	1,794,600
BRIDGER-TETON	472,400	255,700	623,800	206,700
CARIBOU	254,300	41,300	41,700	62,200
CHALLIS	505,600	165,100	372,000	245,800
DIXIE	272,400	188,700	143,600	147,100
FISHLAKE	311,600	10,400	26,791	134,500
HUMBOLDT	185,800	00	352,300	49,300
MANTI-LASAL	229,800	93,600	50,700	60,500
PAYETTE	2,450,500	459,000	4,471,300	2,925,400
SALMON	660,700	68,503	3,080,700	1,176,600
SAWTOOTH	799,500	196,800	385,600	546,000
TARGHEE	338,400	126,100	118,100	287,700
TOIYABE	1,718,400	561,100	603,359	701,400
UINTA	369,700	101,800	201,970	215,200
WASATCH-CACHE	544,000	51,900	301,506	429,700
REGIONAL OFFICE	2,964,200	3,500	332,401	983,900
TOTALS	13,854,900	2,802,603	13,205,427	10,222,090

FFFP = Total presuppression funds expended.~~by Forest.~~
SEVERITY= Amount of severity funds expended by Forest.
FIRE SUPPRESSION COSTS= Forest Service-wide costs of wildfire suppression on each Forest Forest (P-Code expenditures).
FFFS = Total suppression funds expended by Forest.(Includes support to other Regions and units.)

TYPE I TEAM MOBILIZATION

The Type I Great Basin Incident Management Teams were each mobilized once during 1991. The Three Incident Commanders in the Great Basin are: Raddatz, Johnson, and Madden.

Roy Johnson Team	Kitchen Fire	8/14-8/20	Salmon NF
Steve Raddatz Team	McKim Fire	8/25-9/2	Salmon NF
John Madden Team	Dry Cottonwood	10/17-10/24	Bridger-Teton

TYPE II TEAM MOBILIZATION

No Type II teams were mobilized in 1991 from Utah. The three Incident Commanders in Utah are Shive, Shell and Storey. The Three Incident Commanders in Idaho are Hayes, Judd and Christian. The two Incident Commanders in Nevada are Stan Fitzgerald and Mike Boyd.

Roy Hayes Team	Kwis Kwis	7/5-7/9	Challis NF
Mike Boyd Team	Rebel	8/21-8/25	Winnemucca Dist BLM
Stan Fitzgerald Team	Lovely	8/22-8/25	Winnemucca Dist BLM
Jerry Christian Team	McKim Fire	8/27-9/1	Salmon NF
Fred Judd Team	Squaw Lake	9/6-9/11	Payette NF
Fred Judd Team	Kinky	10/17-10/21	Bridger-Teton

TYPE I CREW MOBILIZATION

CREW NAME	*FIRE NAME*	*LOCATION*	*NO. OF SHIFTS*
Alpine HS	Payette ABC	McCall Id	4
Alpine HS	Shorts	Jacksonville Fl.	12
Alpine HS	Wasatch Park	Salt Lake Ut	1
Alpine HS	Mormon Cr.	Stole Meadows Id	3
Alpine HS	Cedar Ciy BIM	Cedar City Ut	5
Alpine HS	Boise ABC	Boise Id	1
Alpine HS	Kitchen	Salmon Id	5
Alpine HS	Bernard	Salmon Id	3
Alpine HS	Garden Vly	Boise Id	2
Alpine HS	Edmunds Cove	Cedar Cty Ut	2
Alpine HS	Squaw Cyn	Arizona	2
Alpine HS	Three Step	Monticello Ut	2
Boise IR	Brian's Cr.	Emmett Id	1
Boise IR	Porphrey Cr.	McCall Id	7
Boise IR	Thompson Cr.	Gallatin NF,Mt	11
Boise IR	Hilltop	Boise Id	1
Boise IR	Boise Front	Boise Id	1
Boise IR	Lightning Cr.	Garden Vly Id	1
Boise IR	Rock Crusher	Ochaco NF,Or	2
Boise IR	Two Bit 2	Cascade,Id	2
Boise IR	Gash Point	Bitterroot NF Mt	7
Boise IR	Talley Cr.	Mtn. Home Id	1
Boise IR	McKim Cr.	Salmon Id	9
Boise IR	Squaw Lake	McCall Id	4
Boise IR	Rock Cr.	Garden Vly Id	2
Boise IR	Third Fork	Ola Id	2
Boise IR	Spruce Lake	Kootnei NF, Mt	3
Boise IR	Pole Cr.	Lowman Id	2
Boise IR	Rock Cr.	Cascade Id	7
Boise IR	ABC Misc	Garden Vly Id	3
Flamingo IR	Severity	Boise Id	3
Flamingo IR	ABC Misc	Boise Id	6
Flamingo IR	Kitchen	Salmon Id	5
Flamingo IR	Moore	Salmon Id	3
Flamingo IR	Hill Clime	Utah State	1
Flamingo IR	Chain Fire	Salt Lake Ut	3
Flamingo IR	McKim	Salmon Id	4

Flamingo IR	Squaw Lake	Payette NF Id	3
Logan IR	Payette ABC	McCall Id	5
Logan IR	Thompson Cr	Gallatin NF Mt	8
Logan IR	East Fork 2	Boise Id	4
Logan IR	Broad Hollow	Wasatch Cache	1
Logan IR	Kitchen	Salmon NF Id	6
Logan IR	Lovely	Winnemucca Nv	4
Logan IR	Harrison Cr.	Lewis & Clark Mt	5
Logan IR	McKim	Salmon NF ID	6
Logan IR	Squaw Lake	Payette NF Id	2
Sawtooth IR	Porphry	Payette NF Id	7
Sawtooth IR	Fourteen	Sawtooth NF Id	1
Sawtooth IR	Thompson Cr.	Gallatin NF Mt	7
Sawtooth IR	Rockcrusher	Ochoco NF Or	3
Sawtooth IR	Murphy	Payette NF	1
Sawtooth IR	Butter	Nez Perce NF Id	4
Sawtooth IR	Kitchen	Salmon NF Id	8
Sawtooth IR	McKim	Salmon NF Id	7
Sawtooth IR	Stratton	Boise NF Id	4
Black Mountain HS	Rock	Shasta Trinity NF	5
Black Mountain HS	Misc ABC	Boise,Id	16
Black Mountain HS	Eastfork #2	Boise,Id	8
Black Mountain HS	Misc ABC	McCall,Id	11
Black Mountain HS	Bernard	Salmon,Id	3
Black Mountain HS	Kitchen	Salmon,Id	8
Black Mountain HS	Lovely	Winnemucca,Nv	3
Black Mountain HS	Colton	Battle Mtn,Nv	1
Black Mountain HS	Becky	Elko,Nv	3
Black Mountain HS	Falls	Malheur NF	9

TYPE II CREW MOBILIZATION

This was a quiet year for the the 36 Type II crews in the Great Basin. Seven crews did not receive an assignments on or off forest. Fifty six crews were dispatched to fires both on and off forest. The crews were on assignment for a total of 171 days.

1991
PERSONNEL EMPLOYED ON FIRE MANAGEMENT ACTIVITIES

CATEGORY	NUMBER SUB-TOTAL	TOTAL
1. Regular appointed personnel		
a. Full time fire protection	117	
b. Part time fire protection	133	
c. Others used on presuppression	175	
d. Others used on suppression	528	
TOTAL		953
2. Seasonal or short-term personnel		
a. Regular fire protection	586	
b.Others some time on fire protection work	1,234	
c. Emergency firefighters	1,279	
TOTAL		3,099
3. Number of casual employees on fire suppression		849
4. Casual employees hired for first time (included in Item 3)	240	
5. **GRAND TOTAL** (1e, 2d, 3)		4,901

FIRE PREVENTION

The Intermountain Region had an active and progressive year in fire prevention. We continue to move forward with interagency cooperation and have formed a Fire Prevention Working Committee under the Great Basin Wildfire Coordinating Group. At present, National Forests, State BLM Offices, and the States have representation on this committee. The committee will focus on coordinating interagency workshops, training and the distribution of special prevention funds to special prevention activities, etc.

A new position located in Aviation and Fire Management was filled with a Fire Prevention Specialist who is assuming the role of key contact for prevention programs and activities.

An Interagency Fire Prevention Workshop was held in March 1991 with 90 participants. This was the first of its kind for many years. It was an enthusiastic group who were interested in promoting fire prevention at the ground level. They received training in communications, CFFP Program, and prevention planning. The general consensus was that this workshop was very successful.

The Intermountain Region jointly sponsored several Special Prevention Activities in the Great Basin. They included programs with the University of Utah, the Salt Lake Golden Eagles Hockey Club, and the Utah Jazz - specifically targeted at the youth participating in the Junior Jazz Program. Three other Special Prevention Activites sponsored in Idaho were the Pocatello Rodeo, Boise Hawks Baseball, and the Idaho Falls Braves Baseball. A dramatic fire prevention message "Wildfires Burn More Than Trees" is now on display in the new Delta Center in Salt Lake City, Utah. It is a 16 foot by 16 foot, backlit sign designed by the Great Basin Fire Cooperators to make the public aware of the wildland/urban interface problem.

Many other Special Prevention Activities were held throughout the Great Basin during FY 1991, funded and hosted at the local level. Examples are the Reno Rodeo, Las Vegas National Finals Rodeo, Les Boise Racetrack, and the Western Days Parade and Rodeo in Twin Falls, Idaho, as well as many local rodeos and fairs with Smokey and his escorts from coop agencies present.

Charles Schultz, a volunteer for the Utah Division of State Lands and Forestry, was awarded the Bronze Smokey for his involvement in fire prevention education over the last 3 years.

The Sierra Front Wildfire Cooperators Fire Prevention Committee was presented a Regional Forester's award in the form of a plaque for superior effort and achievement in addressing human-caused fire problems on the Sierra Front. A Silver Smokey has also been awarded to this committee for their coordinated efforts in fire prevention work along the front for the past 3 years. The Committee has been in existence for 10 years and has grown from a small working group to one that makes nearly one-half million contacts each year. Many dividends have been gained through the interagency participation.

FIRE PLANNING

The Region experienced some major changes and accomplishments in Fire Planning during FY-91.

In March, Fire Planning was re-assigned to the Regional Fuels shop; then in May the Regional Fire Planner, Patti Hirami, accepted another position in R-5. The Planner position was vacant until November, when it was filled by Kris Damsgaard. Kris came to us from R-2 where she had worked in the Denver Coordination Center.

The major accomplishment in Fire Planning for FY-91 was the completion of a re-analysis and updates of the NFMAS data bases on thirteen of the Region's Forests. This effort by the Forest's brought the Regional NFMAS data base up to the current planning period as the other three Forests had completed their update the previous year.

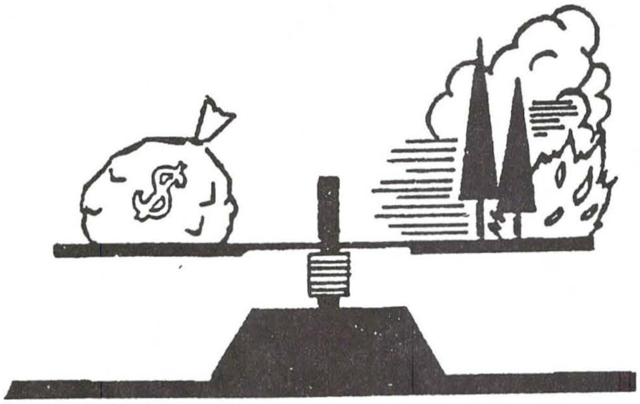
The updated Regional data base in conjunction with the establishment and implementation of MARs 16.0 should help to stabilize the Region's Fire Management program.

PRESCRIBED NATURAL FIRE

The following fire management plans providing for prescribed natural fire have been revised and approved:

Frank Church River of No Return (3/90)
Bridger (6/91)

A Regional Prescribed Natural Fire Fund provides funding for the management of PNF's. $55,000 was available in FY91, composed of fuels, recreation/wilderness, and wildlife funds. Severity of the 1991 fire season provided little opportunity for declaring and managing prescribed natural fires, as a result only 4 PNF's were declared, burning 25 acres at a cost of $1500.00, all within the Payette NF, FC-RONR Wilderness.



FUELS TREATMENT/BRUSH DISPOSAL

FY-91 was an active and productive year for the Region's activity fuels program (Brush Disposal). There were 31,585 acres of hazard reduction accomplished which met 105% of the assigned targets.

The Regional natural fuels program started out with an interesting twist. Due to an error in the FY-91 submissions, the Region had 3,300 more acres assigned than funds available to accomplish them. However, due to some creative work from the WO, R-8, and the Bridger Teton NF, we were able to sell 1,350 acres to Region 8 and resign 1,950 acres to the Bridger Teton. From these interchanges, the Regional natural fuels target was reduced from 8,000 acres to 6,550 acres.

Intense frontal activity and a critical wildfire situation in the northwest and Northern Rockies precluded project accomplishment in FY91 in some cases, carrying the projects and funding over into FY92. ~~Most projects were~~

The final accomplishment as of September 30, 1991 was 4,758 acres or 73% of the target. Of the 1,900 acres that were carried over to FY-92 approximately 1,600 acres were treated in early October.

	FOREST	TARGET/AC	ACCOMPLISHMENT
	Bridger-Teton	3,700	2,390
	Caribou	800	800
	Manti-Lasal	570	270
	Payette	900	500
	Sawtooth	49	49
	Targhee	413	526
	Uinta	223	223
	Totals	6,650	(73%) 4,758

REGIONAL AVIATION & FIRE MANAGEMENT TRAINING

The Great Basin Regional Training program presented 26 courses during the year with 355 Forest Service trainees attending. Courses were presented on an interagency basis and offered to increase the knowledge and improve the qualifications of individuals for fire assignments. Courses were offered at Boise, Salt Lake, Cedar City and Reno.

The most popular courses were Fire Management for District Rangers, with 23 trainees, Fire Operations in the Urban Interface with 38 trainees, and Fire Effects with 21 trainees. Of the 153 instructors, 74 were Forest service employees.

Forty three R4 employees attended the 12 Aviation and Fire Management courses offered at NARTC in 1991.

WORKFORCE DIVERSITY ACCOMPLISHMENTS

Workforce Diversity in terms of:

	White Male	White Female	Minority Female	Minority Male	Total
A&FM Staff (RO)	7	4	1		12
Aviation Staff	15	1			16
FMO's	15				15
Hotshot Crews:					
Boise	9	2		9	20
Sawtooth	12	2		6	20
Toiyabe	11	4	1	4	20
Wasatch-Cache	14	3		3	20
Smokejumpers	51	2	1	13	67

During the 1991 Fire Season, Dispatch utilized 29 woman and 9 men to fill dispatch positions. Of the 38 people called, 3 were minority.

Tom Contreras, Pine Valley District Ranger, Tom Suwyn District Fire Management officer and Hugh Thompson Forest Supervisor were recognized by the Navajo Nation this fall at their "Pow Wow". The award was for special efforts by the Forest to provide employment to Navajo's and developing the Navajo Strike Team.

The Targhee Engine Crews are about 50% diversified with Hispanic, Native American and female crews. Steve DeRoche, a double amputee, works on one of these engines.

Patti Hirami was promoted to FMO in Region 5.

Filled the Fire Planner Position (vice Hirami) with Kris Damsgaard

Three positions were created with FY 91 Workforce Diversity Funds:
- Pilot Trainee, Mary LaMoy, RO
- Assistant Dispatcher/Fire Planner, Barbara Kneiling, Targhee NF.
- Coop-Ed Student, Laura Duke, Wasatch-Cache NF.

Toiyabe NF has recruited three JAC apprentices in FY 1992, the first use of this program in the Great Basin (two women and one minority male).

The Payette NF provided training to Susan Bates and she was promoted to AFMO in Region 5. Kelly Martin was detailed to the Redding Hotshot crew.

FIRE BUSINESS MANAGEMENT

1991 was a year of continued growth and support from Business Management. Several accomplishments were made in Interagency Coordination and cooperation.

Interagency Coordination

A Business Management Working Committee was formed under the Great Basin Coordinating Group to provide an interagency approach to incident business management issues. This has proved to be a valuable forum in which to address interagency issues and through this group major strides have been made in stardardizing business management procedures. Some of the major accomplishments include:

1. Interagency equipment rental rates were established for the Great Basin. These provided for standardization, so that agencies didn't compete against each other and eliminated duplication of efforts.

2. Buying Teams were supported by 54 interagency personnel. Four well qualified teams were staffed with six members each, from all the agencies. Team representation included 12% Park Service, 21% BLM, 4% BIA, 4% States and 59% Forest Service employees.

   Standard Operating Procedures for the Buying Teams were developed and tested.

3. Interagency AD-5 rates were established for significant positions.

Training

Region 4 & 6 worked together and developed a Comptroller training session. The objective of this course was to provide the students with the backgroud, role and responsibilities of the Comptroller position. Thirteen of Region 4's Administrative Officers attended along with others from Regions 1, 3 and 6.

Region 4 joined with Regions 5 and 6 in their development of computer applications for Cost Unit Leaders. Fifteen employees were trained, however only 4 received incident assignments. The Region established a team approach so that Cost Unit Leaders could be trained in a shorter period of time. The Incident Management Teams that utilized the Cost Unit Teams recommended that they be used on all Type I Incidents. The Cost Unit Team can furnish more timely and accurate information for use in the decision making process.

GREAT BASIN FIRE DISPATCH AND COORDINATION

On May 23, 1991, Great Basin Agency Administrators agreed to reduce from four to two Area fire coordination centers by the 1993 fire season. A location was to be selected for a new interagency Area coordination center to serve Utah, Southern Idaho, and Western Wyoming. At that same meeting Agency Administrators directed the Great Basin Coordinating Group to assure that as many single agency and co-located dispatch offices as practicable become true interagency dispatch centers prior to the implementation of the new area center in 1993.

Based on this direction, the Great Basin Coordinating Group requested the Fire Operations Working Committee to delineate logical initial attack dispatch zones and to evaluate the level of opportunities available for implementing interagency dispatch consolidations.A subsequent study determined that the present 28 dispatch offices could be consolidated into 16 initial attack dispatch offices, reducing the number of upward reporting units and also improving coordination of combined agency resources. The study indicates that Nevada, Idaho, and Utah could each be divided into five initial attack dispatch zones and be reasonably managed with just five dispatch offices in each state.

The committee developed a field questionaire to be sent out to dispatch office managers to obtain perceptions about proposed consolidation efforts in their locale. This questionaire was then mailed to all dispatch managers in the Great Basin. Dispatch managers made overwhelming response and often included additional replies from subordinates.

From these responses the committee determined that eight initial attack dispatch offices are already consolidated and operational, with varying degrees of success; while four other zones could be integrated rather easily. It was recommended that these dispatch offices become interagency by the 1992 fire season.

The dispatch offices of two other zones appear to be moderately difficult to integrate but could be consolidated by the 1993 fire season.

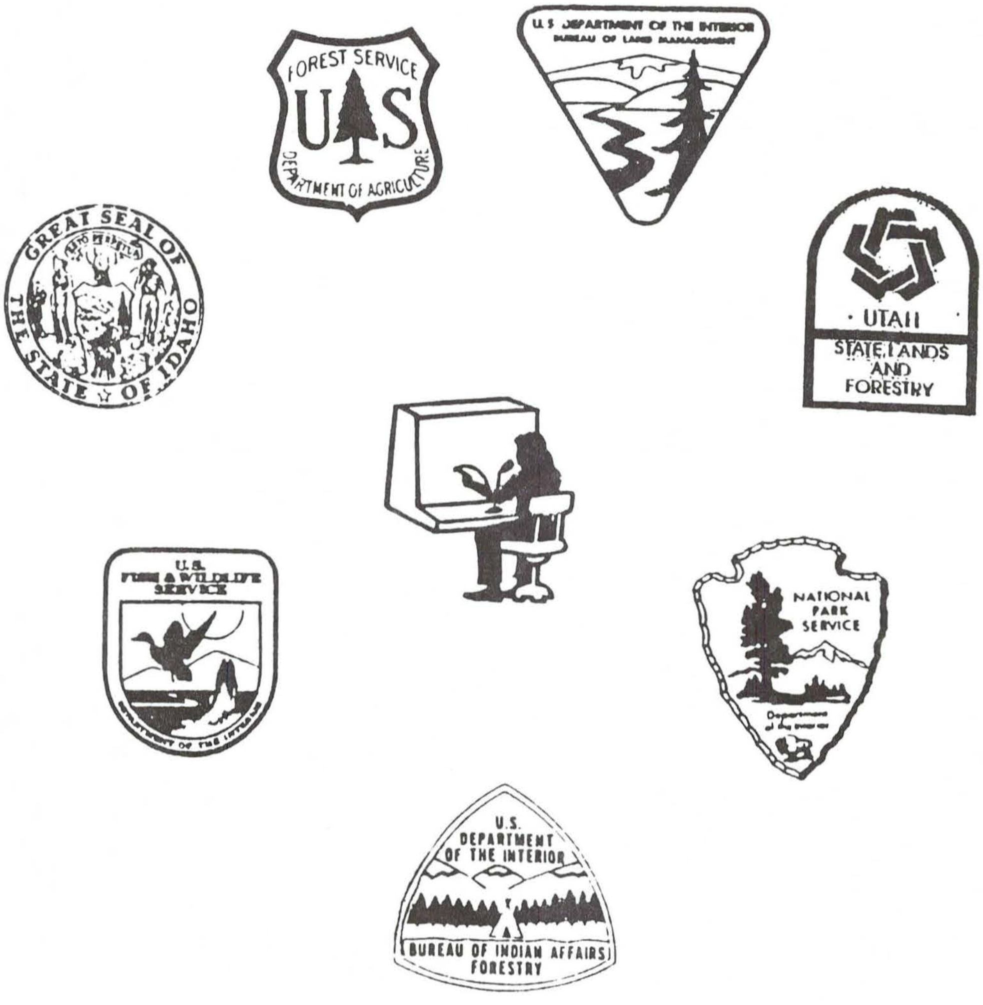
Four dispatch consolidations will be difficult to implement. The committee recommended these consolidations be deferred until after the new Great Basin Coordination Center is operating smoothly.

On December 11, 1991, after an in-depth analysis of alternatives, heads of State and Federal natural resource agencies selected Salt Lake City as the site for a new Great Basin Area Coordination Center. Several locations near the Salt Lake City International Airport are being evaluated as potential sites for this new interagency effort scheduled for operation early in 1993.

This is a prime example of interagency cooperation designed to both improve wildfire suppression coordination and reduce costs. The Center will coordinate and support wildfire suppression activities for all Federal and State wildland fire protection agencies in Utah, southern Idaho, and western Wyoming. This interagency coordination center will replace agency-specific coordination centers presently located in Salt Lake City, Ogden, and Boise. The Nevada Coordination Center will continue to coordinate and support activities in Nevada.

The following Federal and State agencies are participating in the Great Basin Area Coordination Center:

- Forest Service
- Bureau of Land Management
- Bureau of Indian Affairs
- Fish and Wildlife Service
- National Park Service
- Idaho State Department of Lands
- Utah State Division of Lands and Forestry


FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE
U S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GREAT SEAL OF THE STATE OF IDAHO
UTAH
STATE LANDS AND FORESTRY
U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Department of the Interior
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS FORESTRY

1991 RESOURCE ORDERS

The 1991 Fire Season was well below our average year in the Regional Coordination Center.

During the 1991 Fire Season the Center was open 7 days a week from June 2 through October 5 (121 day period). We processed only 3,031 resource orders this year. The 5 year average (1986-1990) is 6,853.

We used 38 detailers in the Center during the 1991 season. Our 5 year average (1986-1990) is 106 detailers.

The office was open 24 hours a day for 16 days compared to the 5 year average of 54 days.

The Nevada Coordination Center processed 590 resource orders this year.
The 5 year average is (1987-1991) is 810.

RESOURCE ORDERS PLACED THROUGH THE REGIONAL COORDINATION CENTER

TYPE OF RESOURCE	*NUMBER OF ORDERS*
AIRCRAFT	336
OVERHEAD	1,374
CREWS	243
EQUIPMENT	274
SUPPLIES	804
TOTAL	*3,031*

RESOURCE ORDERS PLACED THROUGH THE NEVADA COORDINATION CENTER

TYPE OF RESOURCE	NUMBER OF ORDERS
AIRCRAFT	90
OVERHEAD	212
CREWS	49
EQUIPMENT	126
SUPPLIES	79
JUMPERS	34
TOTAL	590

AVIATION HIGHLIGHTS

Without doubt, the Intermountain Region's aviation program was highlighted by the addition of a new turbined powered DC-3 TP.

The Turbo DC-3 TP conversion is the culmination of 10 years of planning and hard work. The conversion purpose was to increase safety and efficiency of the Smokejumping Program by eliminating the risk of old reciprocating aircraft engines. After 2.5 million dollars and 20,000 hours of labor the Region took delivery of the new "Turbo Doug" from Basler Turbo Conversions, Inc. on April 10th.

Early this season the aircraft was put into service at the McCall Smokejumper Base. Use and performance exceeded all expectations. The increased capacity from 12 smokejumpers to a load of 20 provides crew action potential. Cruise speed increased by 50 MPH. The most important achievement is the safety and efficiency gained by maintenance reliability and cost. The aircraft was flown 300 hours. Maintenance costs proved to be the lowest of any aircraft in our fleet.

Our overall program was also enhanced by the addition of Mary LaMoy to our aviation team. Mary was recruited and financed through WO financed workforce diversity program. We are looking forward to moving her into one of our journeyman pilot positions in the near future.

SAFETY

Though we experienced an accident free year we did experience several incidents that had the potential for serious consequences. After a distraction one of our pilots neglected to remove the power tow tractor from the nose of the aircraft and initiated a takeoff. Fortunately the aircraft was safely landed with some damage. The other incident occured on the Phantom Fire. While making an approach for landing to deliver firefighters the Forest Service pilot encountered severe winds and made a hard landing. The helicopter received some damage from a blade strike to the tail. Again we are fortunate that there were no injuries.

FIXED WING AIRCRAFT

FORCE ACCOUNT

Region 4 Force Account Program consists of 11 Forest Service pilots and 6 aircraft. One turbin powered DC-3, one DHC-6 Twin Otter, one Beechcraft BE-99, two Beechcraft 58P Barons and one Aero-Commander 500B (fire aerial photos only). With the exception of the Aero-Commander all aircraft are part of the National Shared Resource Plan.

Of the total Force Account flight hours, 63% were fire related, 32% administrative.

SMOKEJUMER AIRCRAFT

Three Smokejumper aircraft based at McCall Idaho:

MAKE/MODEL TYPE	MISSION	HOURS	COST
DOUGLAS DC-3	Personnel transport	1.60	945.00
	Aerial Photo	1.50	319.50
TOTALS FOR DOUGLAS DC		3.10	1,264.50
DOUGLAS DC-3 TURBINE	Pilot training	56.10	25320.00
	Aircraft Maintenance	2.60	1457.50
	Pers. transport fire	51.70	24771.25
	Smokejumper transport	185.60	93008.75
	Pers. transport ~~normal~~ admin	3.70	1865.00
	Cargo transport	.70	315.00
	Other Normal admin	.20	90.00
TOTALS FOR DOUGLAS DC-3 TURBINE		300.60	146,827.50
DEHAVILLAND TWIN OTTER DHC-6	Training	56.10	25320.00
	Maintenance	2.60	1457.00
	Fire transport	51.70	24771.25
	Smokejumper transport	185.60	93008.75
	Personnel transport	3.70	1865.00
	Cargo	.70	315.00
	Other	.20	90.00
TOTALS FOR TWIN OTTER DHC-6		306.40	112,792.25

MAKE/MODEL TYPE	MISSION	HOURS	COST
BEECH MINI LINER 99	Pilot training	13.80	3160.20
	Aircraft maintenance	2.50	572.50
	Pers. transport fire	12.90	3290.60
	Smokejumper transport	83.10	21204.90
	Equipment transport	.90	231.10
	Pers. transport normal admin	112.70	28317.80
	Other normal admin	1.50	418.50
TOTALS FOR MINI LINER 99		227.40	57,195.60

LEAD PLANES

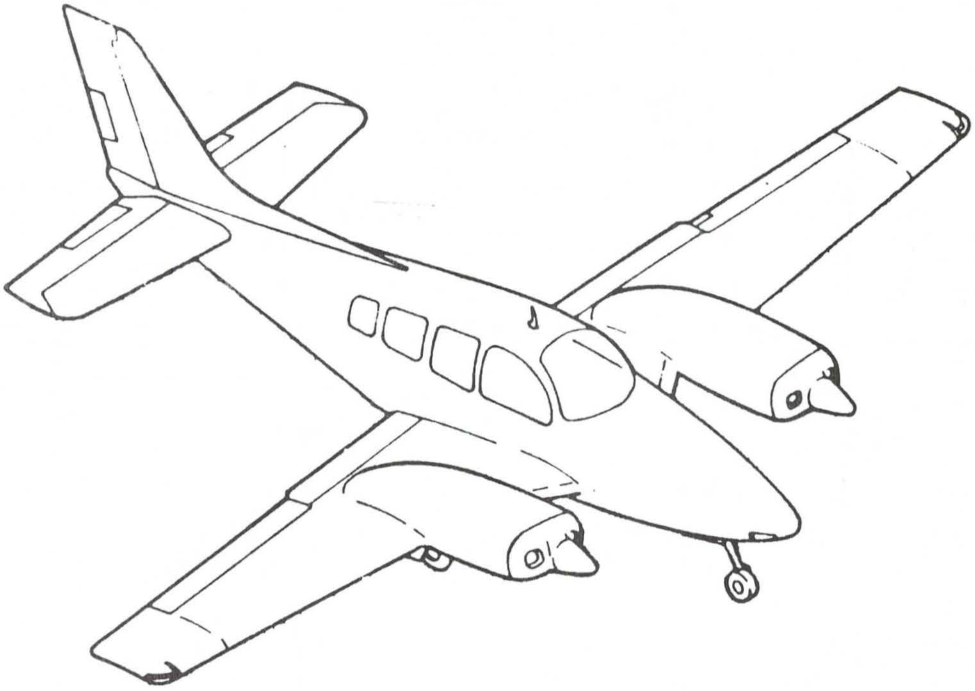
Aircraft and pilots performed early details to Region 3. Region 4 bases were: One lead plane at Boise and one lead plane at McCall.

MAKE/MODEL TYPE	MISSION	HOURS	COST
BEECH BARON 58P	Pilot inspections	1.90	406.10
	Pilot training	54.20	10564.80
	Aircraft maintenance	7.60	1474.40
	Pers. transport fire	15.90	3084.60
	Reconnaissance	1.50	341.00
	Leadplane	222.90	45592.61
	Other fire	.90	174.60
	Pers. transport ~~normal~~ -admin.	241.70	52007.80
TOTALS FOR BEECH BARON 58 P		546.60	113,645.91

CONTRACT & RENTAL AGREEMENT

Region 4 has two contract airtankers. One based in Boise and one in McCall, with a reload base in Salt Lake City. The Salt Lake base saw no activity in 1991.

MAKE/MODEL TYPE	MISSION	HOURS	COST
DOUGLAS DC-4 T	Retardant Ferry Availability	140.80 .60 288.00	196858.79 2215.10 45,622.00
TOTALS FOR DOUGLAS DC-4 T		429.40	244,695.89
LOCKHEED SP-2H T	Leadplane Survey/Observation ? Extended standby Availability Non-Availability Seed & fertilization	46.60 1.20 .00 .00 .00 .00	86118.39 3933.10 54.00 648.00 .00 132.00
TOTALS FOR LOCKHEED SP-2H T		47.80	90,885.49



CWN FIXED WING AIRCRAFT

The Region utilized various makes and models to supplement the in-house aircraft.

MAKE/MODEL/TYPE	MISSION	HOURS	COST
SINGLE ENGINE CWN FIXED WING AIRCRAFT	Inspections	8.30	1123.94
	Fire pers.transport	413.20	65307.66
	Reconnaissance	336.70	46830.29
	Detection	254.60	33884.94
	Air Attack	43.70	6498.49
	Retardant delivery	1.90	279.50
	Rappelling	2.20	242.00
	Equip transport	6.50	1002.44
	Other-Fire	142.40	21991.82
	Admin ~~Normal~~ pers. transport	255.20	41655.31
	Observation	15.20	2355.75
	Animal Count	16.20	1539.00
	Research	2.00	210.00
	Prescribed burns	7.00	1015.00
	Spray projects	19.50	2814.50
	Cargo Transport	8.70	1777.14
	Other-~~Normal~~ Admin	2.00	350.00
	Standby	4.00	100.00
	Extended standby	3.30	100.00
TOTALS FOR SINGLE ENGINE		1542.60	229,077.78
TWIN ENGINE CWN AIRCRAFT	Fire pers. transport	152.60	30729.50
	Normal pers.transport	134.70	59847.51
	Other	42.79	10431.45
	Reconnaissance	17.80	3052.00
	Other Suppression	51.60	16502.77
	Equip transport	.90	173.28
	Inspections	2.10	270.60
	Pilot training	2.60	553.80
	Maintenance	3.30	702.90
	Aerial Photos	166.00	35350.35
	Cargo transport	2.30	540.50
	Smokejumper transport	1.50	577.50
	Other Normal	.10	90.00
	Seed & Fertilizer	.70	192.50
	Detection	3.10	372.00
	Survey/Obs	3.50	1652.00
TOTALS FOR TWIN ENGINE		575.59	161,038.66

REGION 4 AIRCRAFT INCIDENT SUMMARY FOR FY 1991

A summary of all reported aircraft incidents for Fiscal Year 1991 shows that this has been another accident-free year for Region 4.

Compared with the last several years, this fire season was less severe. However, aviation activity was fairly heavy during most of the season. The majority of the flight hours were flown in support of initial attack.

Although no aircraft accidents occurred this year, we did experieance four incidents with serious potential. Two of these were weather related.

The four incidents with potential are as follows:

1. A Baron 58P taxied to the runway and took off with the ground handling tug still attached to the nose gear. Damage occurred during landing when the nose gear collapsed.

2. Minor damage resulted when a Bell 206 L-3 encountered severe wind shear/down drafts at approximately 75 feet above ground level during a landing approach to a meadow.

3. During a long line cargo delivery operation, a Bell 412 encountered wind shifts resulting in the main rotor blades contacting a tree.

4. A smokejumper was forced to use his reserve parachute when his main parachute did not deploy due to a failed extender static line attached to the aircraft.

We are happy to report that since 1982 (9 years) this Region has not had a Region 4 contract helicopter accident. We attribute much of this to the fact that we are able to minimize the turnover of trained and experienced helicopter managers and their assistants.

It appears that the number of incident reports received can be a measure of aviation activity and severity of the fire season. The more severe the fire season, the greater the number of incident reports received. For example, the following number of incident reports were received for specific years:

1988..........76
1989........130
1990......... 60
1991..........45

As in previous years, helicopters account for the most incident reports received. This year 73 percent of the reports were related to helicopter operations.

Although we experienced a 50 percent reduction in the number of unplanned external load releases, the problem is still with us. It appears that at least 3 of the 8 loads dropped were due to the affects of wind shifts/wind shear. Causal factors for the drops are as follows:

Mechanical problems..............3
Pilot intentional releases.......3
Pilot misjudgement................1
Improper sling loading (crew)..1

REGION 4 HELICOPTER OPERATIONS - 1991

There were nine exclusive use, type III helicopters, one severity funded type III helicopter, and two severity funded type II helicopters in the Region this year. Various call when needed (CWN) ships were used as the need arose for additional helicopters.

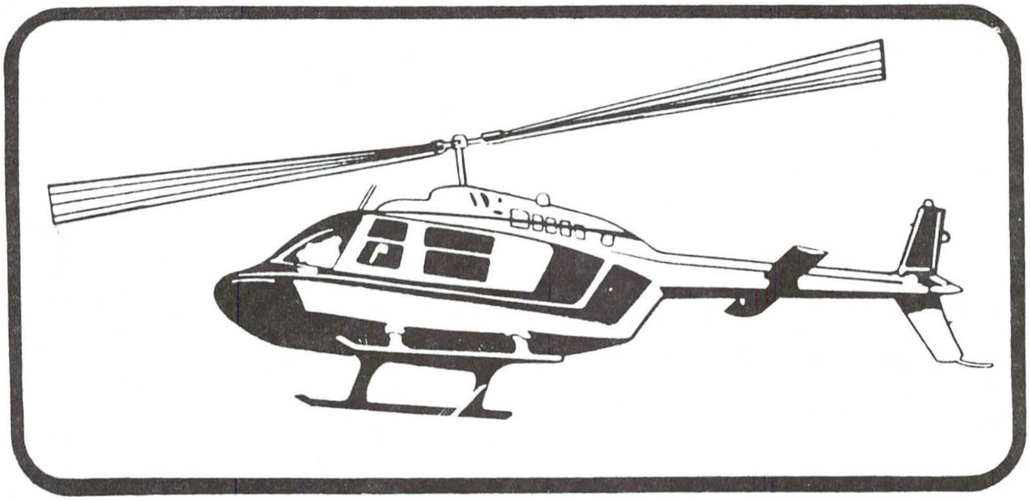
The exclusive use contract at Jackson WY was a Teton National Park (OAS) contract, administered and crewed by the Bridger-Teton National Forest Via an interagency agreement.

The Region's first rappel-qualified base became active this year on the Ashley National Forest.The crew performed 14 initial attack and medivac required rappels in Regions 4 & 1.

The nine exclusive use ships flew a total of 2,240 hours, at a total cost of $1,489,740.00. We have not received totals, other than hours and dollars, for one of the contract ships, however the other eight ships (1,957 hrs. at $1,234,543.00) accomplished the following:

-Water/Foam Delivered:	322,705 gal.
-Cargo Delivered:	48,448 lbs.
-Passengers flown:	7,011

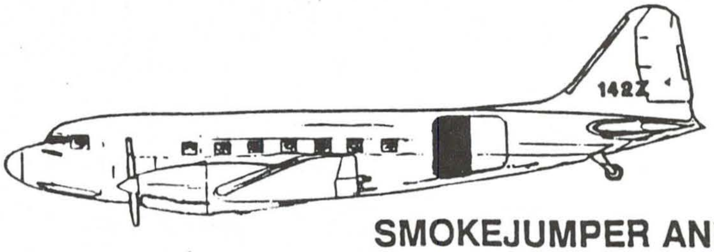
There were no helicopter accidents in the Region during 1991. We did experience two incidents with serious potential. One was a Bell 412/tree strike, and the other was a Bell 206 L3/hard landing.



1991 HELICOPTER USE DATA - INTERMOUNTAIN REGION

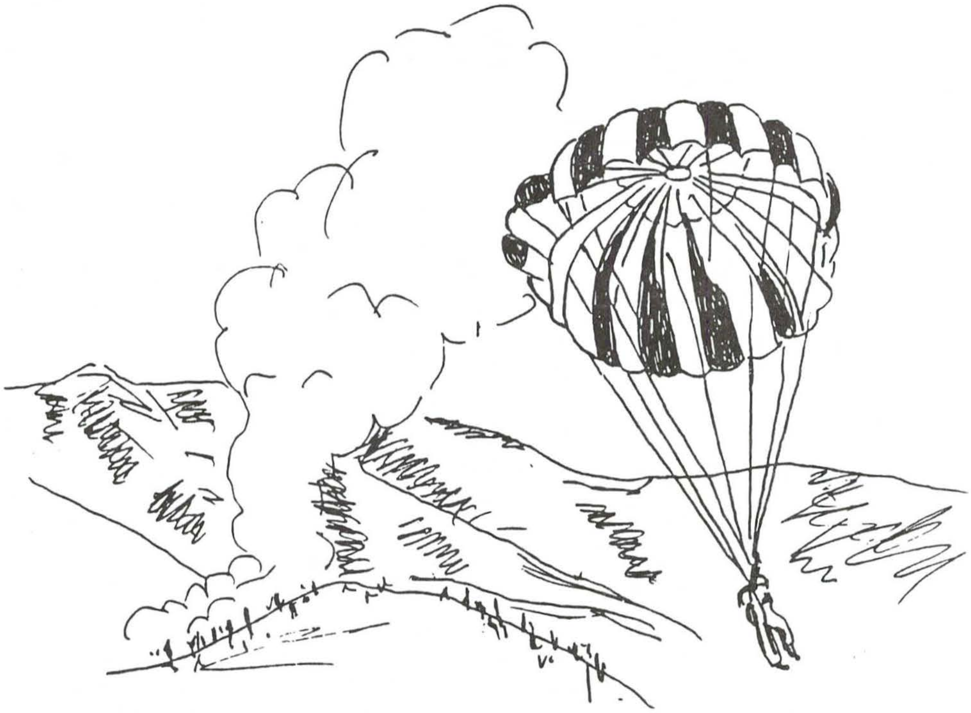
EXCLUSIVE USE, CALL WHEN NEEDED (CWN),AND SEVERITY FUNDED HELICOPTER DATA

FOREST	CREW SIZE	A/C MAKE & MODEL	MANDATORY CONTRACT LENGTH (DAYS)	ACTUAL CONTRACT LENGTH (DAYS)	HOURS FLOWN FOR A&FM	HOURS FLOWN FOR OTHER	HOURS FLOWN ON FOREST	HOURS FLOWN OFF FOREST	TOTAL HOURS FLOWN	DAILY AVAIL RATE	HOURLY RATE	TOTAL CONTRACT COST
ASHLEY	9	BELL 206 L-3	100	110	213	16.3	47.2	182.1	232.7	750	480	153,000
BOISE	8	BELL 206 L-3	90	90	240.9	14.4	227.3	28	255.3		785	192,839.
BRIDGER-TETON	7	BELL 206 L-3	120	120	197.9	84.6	211.4	71.1	282.5		1,280	255,197
CHALLIS	7	BELL 206 B-III	100	134	195.1	112.3	198.8	108.6	307.4		464	92,800.
PAYETTE (KRASSEL)	15	BELL 206 B-III	90	123	246.8	23.4	224.4	45.8	270.2		447.	142,272
PAYETTE (PRICE VALLEY)	10	BELL 206 B-III	90	95	242.5				242.5		447.	116,941
SALMON	10	SA-315B LAMA	64	79	231.7	8.4	231.2	8.9	240.1	942.	517.	207,587
SAWTOOTH	6	BELL 206 B-III	100	109	181.4	63.3	214.7	33.0	247.7		445.	121,727
TOIYABE	9	SA 316 B	90	97	156.3	4.5	74.1	87.7	161.8	800	685.	207,377.
TARGHEE	6	BELL 206 L-3	N/A	N/A					245	1,065	269.	
TYPE I									4.4			15,456
W-C TYPE II SEVERITY	5	BELL 205	60	80					244.4	3,385	532.	341,824
BOISE TYPE II (SEVERITY)	8	BELL 412	60	70					139.5	3,850	796.	248,599
NON-R4 TYPE II (SEVERITY)		VARIOUS							185.9	3500	664	294,134
TYPE II CWN		VARIOUS							348			547,488
TYPE III CWN		VARIOUS							419			291,353
OAS HELICOPTER USE IN R-4		VARIOUS							21.2			11,411
TOTAL									3847			$3,240,005



SMOKEJUMPER AND HELITACK REPORT
REGION 4
1991

	SMOKEJUMPERS		HELITACK
ITEM	HOME REGION	FROM OTHER REGIONS	CREWPERSONS
1. Number of bases	1		14
2. Number of jumpers or crewpersons	64		77
3. Number of fires attacked or jumped			
a.Initial attack	94	17	319
b.Follow-up	12	6	297
c.Total	106	23	616
4. Number of person jumps to fires	535	125	? 48
5. Person-days on fires	1,946	588	2,371



SMOKEJUMPER SUMMARY

The total number of active jumpers at the McCall base this year was 64. There were no rookies trained due to budget constraints. The base was boosted by 98 out of Region smokejumpers (including 32 BLM Ram-Air jumpers) during the summer.

Jump Activity from McCall

	FIRES	FIRE JUMPS	TRAINING JUMPS	RESCUE JUMPS
R-4 Jumpers	98	448	641	10
O.R. Jumpers	*18*	*160*	52	2
Totals	116	608	693	12

Jump Activity out of Region by McCall Jumpers

	FIRES	FIRE JUMPS	TRAINING JUMPS	
R-1	15	34	15	
R-3	6	11	13	
R-5	0	0	0	
R-6	11	28	12	
Alaska BLM	51	106	0	
Boise BLM	0	0	24	
Total	83	179	64	

Total Jumps: By McCall Jumpers

	FIRE JUMPS	TRAINING JUMPS	RESCUE JUMPS
From McCall	448	641	10
Out of region	179	64	0
Totals	627	705	10

Ground Action from McCall Jumpers

	PEOPLE	FIRES
R-4 Jumpers from McCall	25	154
Out of Region McCall Jumpers	22	112
Total Ground Action	34	134

RETARDANT USE 1985 - 1991

GALLONS USED

SALT LAKE CITY TANKER BASE

1985	164,150
1986	122,500
1987	43,600
1988	546,000
1989	136,300
1990	68,550
1991	00

BOISE IDAHO TANKER BASE

1985	375,250
1986	548,305
1987	91,300
1988	545,616
1989	1,321,850
1990	248,700
1991	141,700

CEDAR CITY UTAH TANKER BASE

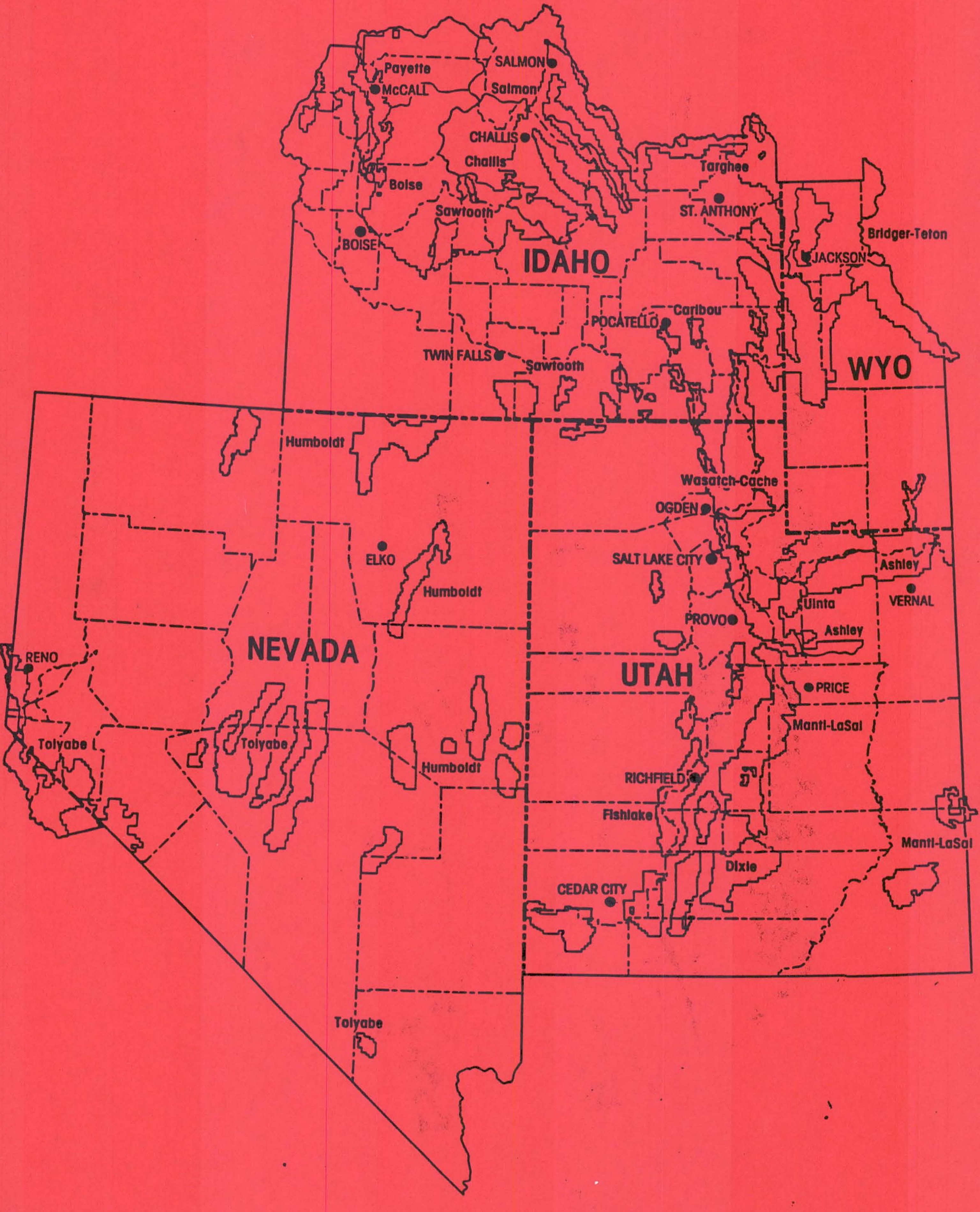
1985	26,900
1986	26,000
1987	59,500
1988	1,600
1989	102,500
1990	16,000
1991	00

MCCALL IDAHO TANKER BASE

1985	227,387
1986	191,105
1987	101,900
1988	400,000
1989	740,000
1990	324,076
1991	389,594

Eight different air tankers delivered the following amounts of retardant from the McCall base to 55 fires. Yellowstone 16,000 gallons, Nez Perce N.F. 10,025, Bitterroot N.F. 2,000 gallons, Sawtooth N.F. 2,020, Wallowa-Whitman N.F. 9,997, Salmon N.F. 17,450, Challis N.F. 4,002, SITPA 11,697, Payette N.F.129,234, Washington State 3,807, and BLM 13,855.

INTERMOUNTAIN REGION


Payette
McCALL
SALMON
Salmon
CHALLIS
Challis
Boise
Sawtooth
BOISE
Targhee
ST. ANTHONY
Bridger-Teton
JACKSON
IDAHO
Caribou
POCATELLO
TWIN FALLS
Sawtooth
WYO
Humboldt
Wasatch-Cache
OGDEN
ELKO
SALT LAKE CITY
Ashley
VERNAL
Humboldt
Uinta
PROVO
Ashley
NEVADA
RENO
UTAH
PRICE
Manti-LaSal
Toiyabe
Toiyabe
Humboldt
RICHFIELD
Fishlake
Manti-LaSal
Dixie
CEDAR CITY
Toiyabe